DOCUMENT RESUME

ED 433 364 TM 030 053

TITLE Statewide Evaluation of Georgia's Middle Grades Educational Program: Phase I Report.

INSTITUTION Georgia State Dept. of Education, Atlanta.

PUB DATE 1998-11-00

NOTE 89p.

PUB TYPE Reports - Evaluative (142)

EDRS PRICE MF01/PC04 Plus Postage.

DESCRIPTORS *Academic Achievement; Achievement Gains; *Educational Change; Middle School Students; *Middle Schools; Program Effectiveness; Program Evaluation; Program Implementation; School Restructuring; *Socioeconomic Status; State Programs

IDENTIFIERS *Georgia

ABSTRACT

How implementation of the middle schools concept affects student attainment of the purposes of middle grades education was studied in Georgia. Focuses were on academic achievement, the cost effectiveness of the Middle School Program, and any modifications needed to improve middle grades education. This study finds that students who attend schools that more fully implement certain elements of the middle school concept are more likely to be academically successful, as measured by average gains in reading and mathematics performance on the Iowa Tests of Basic Skills, and are better supported as they make the transition from childhood to adolescence. All levels of middle school implementation appeared to do similarly well in preparing students for high school. It was evident that in schools in which teachers work effectively in interdisciplinary teams, a key concept of the Georgia middle schools concept, student gains in reading and mathematics are significantly higher. It is noted that the middle schools concept tends to be most fully implemented in schools with more students of lower socioeconomic status, and when the effects of socioeconomic status are controlled for in the analysis, most measurable benefits of middle school implementation disappear. The planned second phase of the study should help clarify this issue. Three appendixes contain a discussion of study methodology, information about gain scores, and a description of instructional practices in the middle schools. (Contains 2 boxes, 17 charts, 19 tables, and 5 annotated references.) (SLD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 433 364

Statewide Evaluation of Georgia's Middle Grades Educational Program:

Phase I Report

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
L. Randonis
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Georgia Department of Education
Research, Evaluation and Testing Division
November, 1998

TM030053

BEST COPY AVAILABLE

Table of Contents

List of Tables, Charts, and Boxes iv

Executive Summary vi

Part One - Introduction and Overview 1
- Middle Grades Education in Georgia 1
- Overview of the Study 5
  - Purpose of the Study 5
  - Definition of Terms 6
  - Evaluation Questions and Data Collection 6
  - Methodology 7

Part Two - Findings of the Study 8
- How Georgia's Schools Implement Middle Level Education 8
  - The Middle School Implementation Process 10
  - Current State-wide Implementation Status 11
- The Role of Socio-Economic Status in the Study 13
- The Effect of Georgia's Middle School Program on Student Mastery of Essential Basic Skills and Knowledge and on Student Opportunities to Master Advanced Skills and Knowledge 14
  - Implementation Cluster and Academic Achievement 15
  - Stakeholders' Beliefs about Middle Grades Education, and Academic Achievement 15
  - Heterogeneous Grouping and Academic Achievement 16
  - Interdisciplinary Teaming and Instruction, and Academic Achievement 17
  - Common Planning Time and Academic Achievement 20
  - Exploratory Courses and Academic Achievement 22
  - Classroom Practices and Academic Achievement 22
  - School Governance and Academic Achievement 25
  - Staff Development and Academic Achievement 28
  - The Effect of SES, Instruction and School Structure on Student Achievement 29
  - Conclusions about the Effect of Georgia's Middle School Program on Student Mastery of Essential Basic Skills and Knowledge 30
- The Effect of Georgia's Middle School Program on Student Transition from Childhood to Adolescence 32
  - Differentiation of Instruction Across Grade Levels 32
  - Advisory and/or Mentoring Programs 35
    - Advisory Programs 35
    - Mentoring Programs 37
  - School Environment 38
  - Conclusions about the Effect of Georgia's Middle School Program on Student Transition from Childhood to Adolescence 41

The Effect of Georgia's Middle School Program on Student Preparation for High School Program/Course Selection 42
Academic Preparation 42
Socio-Emotional Preparation 44
Bridging the Gap Between Middle Grades and High School 45
Exploratory Programs 46
Conclusions about the Effect of Georgia's Middle School Program on Student Preparation for High School Program/Course Selection 49

Part Three - Conclusions and Preliminary Recommendations 50

Annotated References 53

Appendix A - Methodology 54
Determining What Middle Grades Students Experience 54
Selecting the Sample 55
Involving Stakeholders 57
Collecting the Data 57
Surveys 60
Focus Groups 61
Observations 61
Analyzing the Data 61
Calculating ITBS Gain Scores 61
Creating the Implementation Clusters 61
Quantitative Data 64
Qualitative Data 64

Appendix B - Correlation of Gain Scores and Independent Variables, With and Without Controlling for SES 67

Appendix C - Instructional Practices by Cluster, Subject and Grade 70

List of Boxes, Charts, and Tables

Box A: National Middle School Association Philosophy	2
Box B: Georgia Middle School Incentive Grant Criteria	3
Charts A - D	74
Charts E - H	75
Charts I - N	76
Charts O - Q	77
Tables 1 - 4	78
Tables 5 - 8	79
Tables 9 - 10	80
Tables 11 - 13	81
Table A-1	56
Table A-2	58
Table A-3	60
Table A-4	63
Table A-5	65
Table A-6	66

Executive Summary

This report addresses the question of whether and how implementation of the middle school concept affects student attainment of the purposes of middle grades education that are specified in the Official Code of Georgia, Annotated, § 20-2-151. (This section of Code is provided on page 1.) This is the first of three questions that will be addressed concerning middle grades education in Georgia. These questions are:

- How does the Middle School Program affect student academic achievement as indicated by statewide test scores and other measures of achievement?
- Is the Middle School Program cost effective? and
- What modifications of the Middle School Program criteria are needed to improve middle grades education?

This study finds that students who attend schools that more fully implement certain elements of the middle school concept are more likely to be academically successful (as measured by average gains in reading and math performance on the Iowa Tests of Basic Skills between grades 5 and 8), and are better supported as they make the transition from childhood to adolescence. The study also finds that all levels of implementation of the middle school concept do similarly well at preparing students for high school. The major findings that support these claims include:

- At schools where teachers more fully support the middle school concept, student gains in both reading and math are significantly higher. (Table 6)
- At schools where teachers effectively work together in interdisciplinary teams (a key element of the middle school concept), student gains in both reading and math are significantly higher. (Table 7)
- At schools where there is greater support for community involvement in school governance (another key middle school element), student gains in both reading and math are significantly higher. (Table 10)
- At schools where the middle school concept is more fully implemented, teachers report that the school culture is more likely to value accomplishment (that is, stress innovation, excellence, and hard work for teachers) rather than power (cultures that emphasize competition among teachers and distributes opportunities and resources unequally)[1]. At schools where there is an accomplishment-oriented culture, students believe that they have more positive relationships with their teachers, and believe that instruction is more effective. Also at these schools, student gains in both reading and math are significantly higher. (Tables 12, 13)

---

[1]Climate measures and descriptions are based on early versions of the Patterns of Adaptive Learning Survey, developed by Carol Midgely and others and cited in the references section of this report.

- There is no statistically significant difference in the degree to which ninth grade core academic teachers report that students are prepared to enter the ninth grade, regardless of the extent to which the middle school concept was implemented at their students' middle grades school. (Chart O)

These findings were produced by analyzing survey and focus group responses from 84,638 of Georgia's educators, students and parents; as well as 298 person-days that were spent observing school structure and instructional practice at 47 middle grades schools throughout the state.

When considering these findings, it is important to note that the middle school concept tends to be most fully implemented in schools that have lower percentages of students receiving free or reduced price lunch. When the effects of socio-economic status (SES, as measured by free and reduced price lunch participation rates) are controlled for in the analyses, most measurable benefits of middle school implementation disappear. Thus, it is sometimes difficult to say which positive benefits are due to the instructional program and which are due to SES. The second phase of this study, which will in part address the cost effectiveness of Georgia's middle grades program, should help clarify this issue.

As noted above, this study is the first phase of a multi-faceted evaluation. During fall 1998, data on the cost effectiveness of middle grades education and recommendations for improving the legislative and regulatory frameworks that guide middle grades education in Georgia will be collected. A report on these issues is expected in Fall 1999.

Part One -
Introduction and Overview

Middle Grades Education in Georgia

The Official Code of Georgia, Annotated (O.C.G.A.), § 20-2-151, describes the purposes of the various levels of K-12 education in the state. According to the Code,

> It is the policy of this state that the primary purposes of the middle grades program shall be assuring the mastery of essential basic skills and knowledge, assisting students in the transition from childhood to adolescence, and preparing students for the selection of programs and courses consistent with their abilities and interests when they enter high school, as well as providing an opportunity for mastery of essential but more advanced skills and knowledge. For the purposes of funding under this article, the middle grades shall include grades four, five, six, seven and eight.

In Georgia, *middle schools* are a subset, albeit a very large subset, of the *middle grades schools* whose purposes were described above. As such, middle schools are responsible for achieving the purposes specified in § 20-2-151. Ideally, and generally to some degree, middle schools go about the business of meeting these requirements in ways that are compatible with a philosophy designed to meet what middle school advocates believe are the developmental needs of young adolescents. In this report, these practices are collectively referred to as the *middle school concept*. The National Middle School Association's perception of the middle school concept, and of the needs it is designed to meet, are outlined in Box A on page 2 of this report.

Implementation of the middle school concept is voluntary in Georgia. Public middle grades schools that choose to implement the concept are generally eligible to receive Middle School Incentive Grant (MSIG) funding to support their effort. As a condition of receiving this funding, participating schools agree to abide by additional state laws and Georgia Department of Education criteria. These criteria, which are presented in Box B on page 3 of this report, are primarily procedural. Their emphasis is on scheduling and staffing criteria that a school must meet in order to receive MSIG funds. The MSIG criteria do not discuss either content or instructional process.

While the MSIG criteria are procedural, they are intended to support the implementation of the "middle school philosophy." This philosophy has been very clearly articulated by the National Middle School Association. According to that group, young adolescents are best educated in "developmentally responsive middle level schools. Such schools will promote the growth of young adolescents as scholars, democratic citizens, and increasingly competent, self-sufficient young people who are optimistic about their future" (NMSA, 1995, p. 10).

BOX A: National Middle School Association Philosophy

The National Middle School Association believes:

DEVELOPMENTALLY RESPONSIVE MIDDLE LEVEL SCHOOLS ARE CHARACTERIZED BY:

Educators committed to young adolescents

A shared vision

High expectations for all

An adult advocate for every student

Family and community partnerships

A positive school climate

THEREFORE, DEVELOPMENTALLY RESPONSIVE MIDDLE LEVEL SCHOOLS PROVIDE:

Curriculum that is challenging, integrative, and exploratory

Varied teaching and learning approaches

Assessment and evaluation that promote learning

Flexible organizational structures

Programs and policies that foster health, wellness, and safety

Comprehensive guidance and support services

National Middle School Association. (1995). *This we believe.* Columbus, OH: NMSA, p. 11.

BOX B: Georgia Middle School Incentive Grant Criteria

160-4-2-.05 MIDDLE SCHOOL PROGRAM CRITERIA

(1) PURPOSE. This rule provides criteria for the implementation of a middle school program in grades six, seven and eight or seven and eight.

(2) DEFINITIONS.

(a) Academic block - four and one-half hours of instruction time for mathematics, social studies, science and language arts/reading.

(b) Common planning time - 85 minutes of mutual planning by interdisciplinary teaching teams during the student day.

(c) Exploratory block - a variety of exploratory courses in four different areas of study: foreign language, vocational education, fine arts and/or personal learning.

(d) Incentive grant - an additional funding for a middle school program.

(e) Interdisciplinary team - teachers responsible for teaching academic areas of language arts/reading, social studies, science and mathematics to an assigned group of students.

(f) Middle school - a school containing grade levels six, seven and eight or seven and eight.

(3) REQUIREMENTS

(a) Each local board of education applying for a middle school grant shall have an operational plan. The plan shall detail how state requirements are being met.

(b) The plan shall be submitted by June 1 of each year on forms provided by the Georgia Department of Education for approval by the Georgia Board of Education.

(c) Each school with a middle school program shall contain grades six, seven and eight or seven and eight.

(d) Each middle school shall have a full-time principal.
1. If more than the eligible grades are in the school, the grades above and/or below the eligible grades shall also have a full-time principal.

(e) The middle school program shall include at least two interdisciplinary teams per grade, with each team containing two to five teachers in grade six, and three to five teachers in grades seven and eight, with the following exceptions.
1. Based on a feasibility study for consolidation purposes reflecting a system's total student population for grades six, seven and eight or seven and eight in one school, a single interdisciplinary team may teach language arts/reading, social studies, science and mathematics, subject to approval by the Georgia Department of Education.

(f) The middle school shall provide each interdisciplinary team a minimum of 85 minutes of common planning time during the student day.
1. Each team shall use weekly at least two hours of this planning time to discuss student needs and instruction, modification of student groupings and modification of daily or weekly schedules.

(g) Each interdisciplinary team shall have control over the academic time of its assigned students. Individual student schedules may be adjusted for Chapter 1, gifted program and pre-algebra/algebra.
1. The team shall provide daily at least four and one-half hours of academic time in the subject areas of English/language arts/reading, mathematics, science and social studies.
2. A local system may substitute foreign language instruction in place of language arts/reading during the interdisciplinary time.

(i) To be eligible for foreign language instruction during the interdisciplinary block, a student shall score at or above the 60th percentile on a nationally normed test of reading achievement administered during the previous or current school year.
(ii) The foreign language instruction shall not count as an exploratory course.

BEST COPY AVAILABLE

(h) Each school shall schedule middle school students for physical education and health as prescribed by state statutes and state rules.

(i) Each school shall offer exploratory short courses that
1. Reinforce academic knowledge and skills, particularly basic skills;
2. Foster the development of logical and critical thinking skills;
3. Expose students to various high school subject areas and
4. Focus upon knowledge and skills currently or eventually useful to students and shall be related to the state board-approved competencies.

(j) Each student shall complete at least eight different exploratory courses during a three-year middle school program. If the program is a two-year program, students shall complete six different courses.
1. Students shall complete at least two courses in each of three different areas in a three-year program or at least one course in each of three different areas in a two-year program.
2. Each course shall contain a minimum of 20 contact instructional hours.
3. Selections shall be made from the following list.

(i) Areas of Study	Courses
I. Foreign Language	Any foreign language
II. Vocational education (Exploration)	Agriculture, business (keyboarding and word processing), home economics, industrial arts and PECE
III. Fine arts	Chorus, instrumental music, drama, survey of performing arts and survey of high school visual arts
IV. Personal learning skills	Computer utilization, library research skills and survey of high school courses (math, science, social studies and language arts beyond the regular middle school curriculum)

(k) Locally-developed courses shall be submitted for approval by the department.

(l) Study halls are prohibited in an approved middle school.

(m) All teachers shall be certified in field.
1. At least 50 percent of the certified staff serving as interdisciplinary team members shall hold middle grades (4-8) certification or shall earn five quarter credit hours or five staff development units annually in courses specifically approved for middle grades certification.
2. The remainder of the certified middle school staff, excluding those members assigned to the middle school for the first time during the current school year, shall have earned five quarter credit hours or five staff development units in the Nature and Curriculum Needs of the Middle Grades Learner Course.
(i) For the first year that a middle school receives an incentive grant, all staff members enrolled in such course during the school year shall be considered as having met this criterion.

Authority O.C.G.A. 20-2-151 (b) (3); 20-2-290.

Adopted: September 13, 1990 Effective: October 17, 1990
State Standards: I12.1, I12.2

BEST COPY AVAILABLE

Since 1988, when the MSIG was initiated, most of Georgia's school districts have elected to implement the middle school program. During the 1996-97 school year, the year in which most of the data used in this study were collected, 85% of the schools that taught students in grades 6-8 or 7-8 received funding under this program. During that year, 53 schools that taught a qualifying grade span (but may or may not have met other criteria) did not participate in the program. Seventeen of these schools taught students in only grades 6-8 or 7-8. The remainder were predominantly K-8 (n=16) or 6-12 (n=6) schools.

Although state code defines the middle grades as four through eight, MSIG funding is more limited. Eligible schools must serve children in grades six, seven and eight, or in grades seven and eight. Most of Georgia's schools that receive MSIG funding teach students in grades six through eight. However, schools that teach grades 7-12, K-8, and other configurations are also eligible (provided that they meet the other criteria). Because they do not teach the required grade spans, schools including grades K-6, 8-12, and other configurations are not eligible to receive MSIG monies.

The MSIG provides funded schools with 113% of their base FTE funding. Consequently, the increase in participating schools has led to a proportional increase in the annual cost of the program (Chart A). The Department of Education Budget Office estimates that the annual cost of the program will exceed $85,000,000 in Fiscal Year 1998 (the 1997-98 school year).

The dramatic increase in the number of schools participating in the MSIG program, the resulting increase in the program's the cost to the state, and uncertainty about the impact of middle schools on Georgia's children have prompted educational leaders across the state to ask three questions:

- How does the Middle School Program affect student academic achievement as indicated by statewide test scores and other measures of achievement?
- Is the Middle School Program cost effective? and
- What modifications of the Middle School Program criteria are needed to improve middle grades education?

THIS REPORT ADDRESSES THE FIRST OF THESE QUESTIONS, AND PROVIDES PRELIMINARY GUIDANCE ON THE THIRD. Both the second and the third questions will be addressed in a second report, scheduled for release in January 1999.

Overview of the Study

Purpose of the Study. This evaluation was conducted at the request of Georgia State Superintendent of Schools Linda Schrenko. It is designed to provide education and other public policy leaders with state-level information on the contribution of the middle school concept to the attainment of Georgia's educational goals.

It is doubtful that the "middle school concept" is interpreted uniformly across Georgia. Certainly, it is not implemented uniformly in all middle grades schools. This evaluation does not attempt to compare middle schools with junior high schools; there are far too few pure models of

each. Instead, this study creates and compares four levels of schools that are based on the the practices and beliefs that prevail in communities across the state.

Because this is a state-level evaluation, school-level data are not reported. The value of this evaluation lies in comparing patterns of implementation to the attainment of state educational goals, and in providing teachers and administrators with data at their school that can feed into their building-level school improvement efforts. Efforts to compare individual schools to each other, or to the state as a whole, should rely on the State, System, and School Report Cards that are released each year by the Georgia Department of Education, or on other valid and reliable measures that are designed to allow such comparisons.

Definition of Terms. Throughout this report, unless it is specifically stated otherwise, the term "middle grades schools" will refer to Georgia's public schools that teach students in grades 6-8 or 7-8. Middle grades students will be defined as those attending public school in one of these three grade levels. These students may, however, be taught in schools with wider grade spans (e.g., K-8, 7-12, etc.). "Middle schools" are those middle grades schools that receive the Middle School Incentive Grant. Where the term "schools" is used, it means the schools in the sample and not all middle grades schools in Georgia.

In order to meet the state definition of a middle school, a school must conform to the requirements of the MSIG. However, because the MSIG criteria cover procedural and administrative matters, receiving the middle school designation does not in and of itself provide any information about the type of instruction or other experiences that students receive when they attend that school. The instructional program may closely follow the middle school concept, it may closely resemble a traditional departmentalized junior high school, or it may fall somewhere in between.

Evaluation Questions and Data Collection. This evaluation relies on four data sources. Student achievement data and other relevant information routinely collected by the Georgia Department of Education were used to assess the "product," or results, of the educational process. Surveys and focus groups were used to gather information on the educational beliefs of middle grades and high school students, parents, teachers and administrators, and other concerned citizens across Georgia. The surveys, focus groups, and in-school observations also provided insight into the instructional practices that occur daily in Georgia's public middle grades schools.

The questions asked during the first year of the study were developed in cooperation with middle grades practitioners throughout the state. In October and November 1996, a total of eight informal discussion groups were held in Tifton, Statesboro, and Gainesville (two at each of the first two sites, and four in Gainesville). The 99 middle grades and high school teachers and administrators who participated in these sessions shared their opinions about what indicators of middle grades success the study should look for and how these indicators should be measured. In addition, more than 1,700 middle grades teachers, counselors and administrators, as well as central office administrators, submitted written recommendations.

Throughout the winter of 1996-97, the design of the study was developed by staff in the Department of Education's Research, Evaluation and Testing Division (RET). This was done in consultation with Department leadership; the statewide School Improvement Panel and its Middle Grades Subcommittee; the Georgia Middle School Association; the Georgia Middle School Principals' Association; and middle grades and/or research faculty at Valdosta State University, Georgia Southern University, and the University of Georgia.

Surveys. The surveys that were used in this evaluation were developed, administered, and analyzed by RET staff. In April 1997, the middle grades student and teacher surveys were field tested at Arnold Middle School (Muscogee County), Coosa Middle School (Floyd County) and East Coffee Middle School (Coffee County). After these field tests had been completed, RET personnel spent a day at each school interviewing all teachers about the survey and soliciting their recommendations for changes. Research faculty at Valdosta State also reviewed both surveys.

Also in April, a stratified sample of 92 middle grades schools from across Georgia was invited to participate in the survey portion of the study. (A complete description of the sampling process, a list of the schools that participated in the study, and other methodological issues for the collection and analysis of the survey, focus group and observation data is presented in Appendix A.) Eighty-nine schools accepted this invitation and received survey materials in early May 1997. Ultimately, 81 schools returned a total of 2,481 teacher and 46,570 student surveys.

In August 1997, an Administrator Survey was sent to the principal at each school that completed the teacher and student surveys. Seventy Administrator Surveys were returned.

In December 1997, and with the consent of their schools' principal, 9th grade students at the sample schools' receiving high schools completed the high school student survey. Because of the timing of the surveys, these were the same students who had completed the middle grades student survey the year before. At those high schools that receive most of their students from a single feeder school, a survey was also administered to 9th grade teachers. The high school surveys yielded 34,693 student and 486 teacher responses.

Focus Groups. In May 1997, a total of 44 focus groups were conducted, with four focus groups meeting in each of the state's 11 federal congressional districts. These meetings were conducted by researchers from the Denver, Colorado office of RMC Research, Inc., a nationally known educational research firm. RMC was awarded the focus group contract after a competitive process administered by the Georgia Department of Administrative Services.

Participants in the focus groups included 146 middle grades teachers, 14 high school teachers, 55 middle grades administrators, 10 high school administrators, 33 middle grades students, 18 high school students, 50 parents of middle grades students, 8 parents of high school students, and 4 other community members. This resulted in a total of 338 participants. No individual participated in more than one focus group.

Observations. The evaluation also uses information produced by nearly 300 person-days spent observing middle grades education as it was being implemented statewide. In September and October 1997, observations were conducted at 47 middle grades schools by faculty and graduate students from twelve universities throughout the state: Albany State University, Armstrong Atlantic State University, Augusta State University, Fort Valley State University, Georgia College and State University, Georgia Southern University, Georgia State University, Kennesaw State University, North Georgia College and State University, University of Georgia, Valdosta State University, and State University of West Georgia.

Methodology. The process by which participants in the study were chosen and data were collected, analyzed, and reported, as well as the assumptions underlying those processes, are presented in Appendix A of this report.

Part Two - Findings of the Study

This part of the report describes how the middle school concept has been implemented in Georgia, and how that implementation affects the four purposes of middle grades education, as outlined in Section 20-2-151 of the Official Code of Georgia, Annotated. The first and fourth purposes, which both address student academic achievement, are discussed jointly in the section entitled "Effect of Georgia's Middle School Program on Student Mastery of Essential Basic Skills and Knowledge, and on Student Opportunities to Master Advanced Skills and Knowledge." The remaining two purposes, assisting children in the transition from childhood to adolescence and preparing them to select high school courses, are discussed in separate sections. To establish a context for understanding the findings and their limitations, discussions of (1) how Georgia's schools implement middle grades education and (2) the role of socio-economic status in certain aspects of middle school implementation are also presented.

Throughout this report, data are presented in both Tables and Charts. To avoid confusion, Tables are identified by number and Charts are identified by letter (e.g., Table 1 and Chart A).

This evaluation identifies conditions that are currently associated with high levels of success in meeting each of the state's four middle grades purposes. (Throughout this report, certain key points are printed in red to highlight their importance.) The underlying assumption is that replicating these conditions, to the greatest extent possible, will lead to similar strong performance at other schools.

Although causal relationships are not presented here, it is anticipated that they will be produced as the result of longitudinal data collection that is planned during the second and third years of this evaluation project. Other relationships that are not included here, such as the influence of district- and school-level leadership on the products of the middle grades program, will also be explored in subsequent phases of the study.

How Georgia's Schools Implement Middle Level Education

As noted in Part One of this report, 85% of Georgia's schools with middle grades programs participated in the Middle School Incentive Grant program during the 1996-97 school year (the year in which most data were collected). Consequently, the issue in our state is not one of comparing practices at schools that receive the grant with practices at schools that do not. Rather, the issue is the affect that various middle grades education practices, and the beliefs middle grades teachers hold concerning their professional responsibilities, have on the successful attainment of the state's legislatively mandated purposes of middle grades education.

The findings of the study clearly show that not all middle grades schools in Georgia, and not even all of the schools receiving MSIG funding, view and implement their instructional programs in the same ways. Although each school has its own way of implementing the middle grades concept, the focus groups and observations revealed that there is a strong underlying agreement among teachers and principals as to the basic tenets of the middle school concept. The basic elements and philosophy of the concept, as expressed by Georgia's middle grades teachers and administrators who participated in this evaluation's focus groups, are:

- a child-centered focus (as compared to a subject-centered focus in junior high schools);
- a whole child focus, attending not only to academics but also to the social and emotional development of students and to broadening their experience and knowledge via an exploratory curriculum;
- a belief that the middle grades years should provide a caring and nurturing environment;
- a team-based instructional and grade level structure with a focus on interdisciplinary instruction;
- heterogeneous grouping of students;
- flexible block schedules; and
- ample time for planning, coordination and individual attention to students by providing core academic teachers with common planning time.

These characteristics are not necessarily limited to schools that receive MSIG funding. In the sample drawn for this evaluation, twelve schools did not receive Incentive Grant funding in 1996-97. Five of these twelve are not teaming, which is to say that they are not implementing the middle school concept. However, the remaining seven non-MSIG funded schools in the sample are, at least to some degree, applying the middle school concept. Of these seven schools, one serves students in only grades 6-8. Two of the remaining sites are K-8 schools, two are K-12 schools, and two are 6-12 schools. (None of these schools has a separate middle grades administrator, making them ineligible for the MSIG as it is currently written.) Finding that such diversely structured and funded schools are, at least at a fundamental level, applying some principles of the middle school concept, supports the position that a simple comparison of MSIG funded versus non-funded schools is not an appropriate or acceptable design for this evaluation.

Throughout this study, reference is made to Iowa Test of Basic Skills (ITBS) gain scores as a measure of academic achievement. These scores were calculated for each middle grades school in this sample using the following formula:

Gain Score = MGA - (sum of 5th grade feeder school averages / number of feeder schools)

where MGA = the middle grades school's average ITBS score. The ITBS Developmental Standard Score, which is designed to allow cross-grade comparisons, was used for both reading and math scores at the 5th and 8th grade levels.

Only feeder schools supplying 20% or more of the middle grades school's students were included in the calculation. This was done to minimize the influence that extremely high or low scoresfrom a non-representative school might have on the gain score.[1] Gain scores were computed for both reading and math. The calculation of the gain scores is discussed more fully in Appendix A.

---

[1]There are two potential problems in using this approach. First, a school might receive a large number of students from one feeder school and a smaller number of students from another school with much higher or lower 5th grade ITBS reading and math standard scores. In this sample, this situation did not occur. Second, a school could receive a large number of its students from a variety of feeder schools that individually contribute less than 20% of the total. This happened in one instance. Re-calculation of that schools gain score using all feeder schools resulted in no change in the reading gain score and a two point increase in the math gain score. The higher math score was used in all analyses.

In the definition provided above, it is important to emphasize that this evaluation uses school-level, not student-level, data. This approach has the disadvantage of reducing the variance in the data set. However, this methodology is appropriate for addressing an evaluation question that centers on how school-wide structure and practice affect the development of students *as a group* at any given school, not how individual students respond to those school characteristics.

This evaluation clearly shows that regardless of how middle grades schools accomplish the task of educating children, one thing remains constant: Where teachers share a greater acceptance of the state's middle grades purposes, students' ITBS gain scores are higher. There is also a moderate positive correlation[2] between schools providing a positive and safe learning environment, and achievement as measured by ITBS gain scores (Table 1).

The Middle School Implementation Process. Georgia's public schools have implemented the middle school concept in a variety of ways, and over more than a decade. Consequently, there is tremendous diversity of practice across the state. Among the focus group, observation, and survey participants, there was a wide range in the length of time that schools had been employing the middle school concept. Several schools had yet to implement it. Some had implemented the middle school concept within the previous 2-6 years. A few began the process even earlier.

In the focus groups, teachers and administrators at schools that had adopted the middle school concept reported that they participated in a number of staff development events in preparation for the change. These events included in-service training, seminars, observation at existing middle schools, and extensive planning. Most, but not all, teachers and administrators remembered feeling well informed and well prepared for the transition.

In those instances where school staff are adopting the middle school concept without adequate preparation, implementation is problematic. For example, over the three days that a three person observation team was in one of the schools it became clear that the staff were experiencing problems putting the concept into practice. Teachers at this school reported that they have encountered many barriers to implementing the middle school concept, including the attitudes and beliefs of school administrators, distrust of the concept by some teachers, not having enough time during the school day to implement common planning time, and the physical facilities of the building.

Many schools participating in the study had been middle schools for such a long time that a few teachers were unable to recall what staff development was available for the transition from a junior high model to a middle school. One teacher remembered the process as *"havoc,"* but noted

---

[2] At various points, this report presents the results of correlational analyses. The values shown in the corresponding tables are the correlation coefficients, which are represented by the letter "r." r indicates the strength of the relationship being reported. Throughout this report, coefficients between .20 and .49 are considered to be moderate. Larger coefficients (.50 and above) indicate strong relationships. Values between 0 and .19 are considered weak. p values indicate the level at which the relationship is statistically significant. A p value <.05 means that the relationship will be the result of chance in fewer than 5% of cases. A p value <.01 lowers the odds of a chance relationship to fewer than 1% of cases. A statistically significant relationship is not necessarily a meaningful difference. Readers must decide for themselves whether reported differences are meaningful.

that the two-week training session was vital to the transition process. *"We had a good training on what is a middle school, how to plan units. During that short time, we went from a group of individual teachers to a set of teams. Some teachers packed up and left because they didn't fit with the philosophy. They worked better as individuals."*

By and large, educators' expectations of what was to come during the transition to the middle school model proved to be accurate. Most teachers and administrators had positive and, in hind sight, realistic expectations of what middle school would be. For some, the first year of transition was "*rough.*" Learning the system and working out the logistics took some time. Some felt the transition was easier than expected, primarily as a result of extensive preparation and planning. "*We had classes far in advance and slipped into it easily,*" explained a grateful middle grades teacher. Not all agreed. *"I was scared,"* declared one middle grades teacher. "*Pure panic,*" said another.

Current State-wide Implementation Status. Across Georgia, most middle grades schools have adopted, to some extent, the middle school concept. However, the degree to which that implementation has occurred varies widely. The educational experiences of students attending middle grades schools in different districts, and sometimes even within the same district, can be quite different. Educators at most of the observation sites reported that they follow the middle school concept, although many are still in the process of implementing some programs associated with middle schools. (As discussed later, advisory programs are the most frequently non-implemented instructional component.)

Several schools that were included in the observations do not view themselves as true middle school programs. Observers at a magnet school reported that while the middle school concept "*would stress the importance of the school fitting the needs of the child, the program here requires the child to fit the school.*" At another site, the principal noted that, *"We are a hybrid, the best of both..."* the middle school and junior high school concepts. Speaking to the perception that middle schools are not always as rigorous as they should be, this principal added, *"The whole system is academically focused. I don't want to entertain my kids. We are instruction first."*

The survey data also uncovered considerable variation in the extent to which the middle school concept is being implemented, even among schools receiving MSIG funding. To make sense of the effect of these varying patterns of implementation, the first task in analyzing the survey data collected through this study was to group schools together according to the actual practices that they are using. This was done to begin to answer the question: Do increased levels of middle school implementation have an effect on student achievement?

Seven dimensions of middle grades practice, identified through primary and secondary factor analysis of the teachers' survey responses, were used to group schools according to the degree to which they are implementing the middle school concept. The seven dimensions of middle grades practice identified by this study are: Unity of Purpose, Teamwork, Emphasis on Student Growth, Emphasis on Gaining Knowledge, Emphasis on Teaching Higher-Order Thinking Skills, Positive School Environment, and Student Assessment Practices. These dimensions suggest that the middle school concept, as it is being conceived and implemented in Georgia, parallels the National Middle School Association (Box A, page 2) in many but not all regards. The major difference between Georgia practice and NMSA recommendations is that schools in the state appear to have largely ignored NMSA guidance concerning "Programs and policies that

foster health, wellness, and safety" and "Comprehensive guidance and support services." (Definitions of the middle school dimensions developed in this evaluation, and the sub-scales that underlie them, are presented in Appendix A.)

The four middle school implementation clusters that emerged during this study are:

Cluster 1: Schools accepting and implementing middle grades practices at a considerably lower level than was found across the sample (2 or more standard deviations below the overall sample mean score on the seven dimensions of middle school concept implementation)

Cluster 2: Schools accepting and implementing middle grades practices at a somewhat lower level than was found across the sample (1 standard deviation below the overall mean)

Cluster 3: Schools accepting and implementing middle grades practices at a somewhat higher level than was found across the sample (1 standard deviation above the overall mean)

Cluster 4: Schools accepting and implementing middle grades practices at a considerably higher level than was found across the sample (2 or more standard deviations above the overall mean).

The decision to use standard deviations to define the cut points was based on the desire to assure that Cluster 1 contained schools that were well below the sample mean in terms of implementing the middle school concept, and that the schools in Cluster 4 were well above that mean. (Appendix A more fully describes the process of creating the clusters, and the descriptive characteristics of each cluster.)

To assure the reliability of the dimensions used to create the clusters, values were not computed in cases where data were missing from the individual teacher responses. Schools were only assigned to a cluster if they had values for at least five of the seven middle grades dimensions. This process resulted in a total of 79 schools being assigned to one of the four clusters. Two schools were missing data on three of the dimensions, and were dropped from all analyses involving implementation clusters. They were, however, included in other analyses. (Appendix A discusses in detail the process used to group the schools into clusters.)

Table 2 presents the number of schools in each cluster. It can be seen that, according to this measure, there is indeed considerable diversity of practice across the state. It is also apparent that while most of the schools in the sample are making at least some effort to implement the middle school concept, few have fully put the concept into operation.

The Role of Socio-Economic Status in the Study

Given the strong role that socio-economic status (SES) has been repeatedly shown to play in education, it is important to note how the percent of students receiving free or reduced lunch, a common proxy for SES, varies by implementation cluster.

Table 3 shows the average percent of students receiving free or reduced lunch at the schools in the cluster. There is a moderate negative correlation between free/reduced lunch and middle school implementation, as reflected in cluster placement ($r = -.27$, $p < .05$). (A negative correlation indicates an inverse relationship; as one measure increases, the other decreases.) The lowest and highest percentage of students receiving free or reduced lunch at the schools within each cluster are also shown in Table 3.

At least within the sample of schools used in this study, schools serving less affluent communities are less fully implementing the middle school concept. It seems, then, that implementation of the middle school concept in Georgia is tied to community socio-economic status, with higher implementation occurring in more wealthy communities.

Free and reduced lunch also plays a part in determining the extent to which the seven dimensions that underlie the four clusters are implemented. Chart B presents the average score on the seven middle school concept dimensions discussed earlier. Here, the dimensions are disaggregated to compare schools in the lowest and highest free and reduced price lunch quartiles, rather than clusters. Some of the dimensions included in Chart B were created from survey items that used a 4-point Likert response metric. The items that produced other dimensions used a 5-point metric. (No dimension used both 4-point and 5-point metrics.) The mean scores based on a 5-point metric were multiplied by 4, and the mean scores based on a 4-point metric were multiplied by 5, in order to allow direct comparison of the means that are reported here.

Chart B demonstrates that students in the highest SES schools in the sample are more likely to experience every dimension of the middle grades concept than are students in the lowest SES schools. In all but one case, assessment practices, the differences between the two groups are statistically significant. (In Chart B, and all other charts and tables, a single asterisk indicates that $p < .05$, and a double asterisk indicates that $p < .01$).

Finally, and to no great surprise, SES was found to be strongly associated with ITBS gain scores in both reading and math. As shown in Table 4, there is a negative correlation between the percent of students in a school receiving free or reduced price lunch and school average ITBS gain scores. In other words, in areas where schools serve more affluent students, average school gain scores are higher.

The fact that the relationship between SES and achievement applies to gain scores, and not simply to 8th grade test scores, is particularly important. If this study found that 8th grade ITBS scores were lower in schools with higher percentages of students receiving free or reduced price lunch, it would simply support an argument that has been repeatedly made in other research - that socio-economic status predicts academic achievement. Such a finding would leave unaddressed the matter of the extent to which lower 8th grade scores are the result of deficiencies that accumulate during the elementary years. However, using gain scores (i.e., the difference between

8th grade and 5th grade scores) makes it clear that the effects of poverty continue to undermine academic achievement as students move through the middle grades years.

The Effect of Georgia's Middle School Program on Student Mastery of Essential Basic Skills and Knowledge, and on Student Opportunities to Master Advanced Skills and Knowledge

As noted above, Georgia law states that assuring student mastery of essential basic skills and knowledge is one of the purposes of the state's middle grades education program. State code does not identify what constitutes essential basic skills and knowledge. However, the state has a long tradition of relying on the Iowa Tests of Basic Skills (ITBS) as an indicator of student academic performance in grades 3, 5, and 8. In this study, the relationship between mastery of basic essential skills and middle grades implementation will be measured using school average gains in ITBS scale scores between 5th and 8th grade. A complete description of how these measures were calculated and how they are related to implementation is included in Appendix A.

It should be noted that the ITBS scores may be an imperfect indicator of academic performance. They are used here because many educational leaders in Georgia value the information they provide, and because they allow direct analysis of the average extent, at the school-level, to which the 1996-97 8th grade class has or has not improved in reading and math since taking the ITBS in the 5th grade. A limitation of this part of the study is that ITBS may or may not be the best possible measure of how well students have learned what they have been taught. It is, however, the best statewide measure that we have available at this time.[3, 4]

---

[3]Georgia also mandates that students take a writing test during their 8th grade year. However, the tests are not constructed to allow computation of meaningful gain scores across years. Consequently, only ITBS gain scores are used. Beginning with the Spring 2000 test administration, a state-developed Criterion-Referenced Competency Based test that is fully aligned with the state's curriculum framework will be available to provide additional student achievement data.

[4]Readers are reminded that this evaluation looks at schools as the basic unit of analysis. Unless noted otherwise, the data reported in this report are based on school-level data. This means, for

Implementation Cluster and Academic Achievement. Average ITBS gain scores were found to be higher in Cluster 4 (fully implementing) schools than they are in the other clusters (Chart C and Table 5). While the differences are not large enough to be statistically significant, they may nonetheless be meaningful. In reading, there is a clear difference in the performance of students in Cluster 4 schools when compared to students in the other three clusters.

Math scores follow a different pattern. Students at Cluster 4 schools have the highest math gain scores, followed by students in Cluster 1 schools. This suggests that full implementation of the middle school concept is associated with higher math achievement levels. However, at least in terms of math gains, little or no implementation of the middle school concept is preferable to partial implementation.

Looking at the effectiveness of the middle school concept through the lens of implementation clusters provides a broad-brush view of how the concept *as a whole* affects students. However, relying exclusively on this approach could mask the effect that certain individual elements of the middle school concept might have on student achievement. Analysis of these elements did, indeed, uncover certain relationships that help understand how this concept affects children's education. The results of these analyses are described in the following sections of this report.

Stakeholders' Beliefs about Middle Grades Education, and Academic Achievement. All three parts of this evaluation (surveys, focus groups, and observations) showed that there is broad, nearly (but not completely) universal support for the middle school concept among middle grades teachers, administrators, parents, and students. (In the section on the preparation of middle grades students for high school, we will discuss the finding that, in this study, the most vocal critics of the middle school concept were high school teachers and administrators.)

In the focus groups, middle grades teachers and administrators were nearly unanimous in their assessment that the overall impact of the middle school concept on students was positive. Both groups also noted that middle school students seem to have a more positive orientation toward school and learning than do students attending a school using a traditional, departmentalized junior high school structure.

Teachers at one middle school randomly chosen for observation reported that they see themselves as *"providing the cement and glue and shoring up what was missing from elementary school and needed for success in high school"* (quote from a middle school teacher). "*I love it,*" and "*It's wonderful,*" declared two middle grades principals who participated in the focus groups. "*A great change, just what the middle grades need,*" a middle grades teacher added. As will be discussed more fully in the section on preparing students for high school, the main criticism that

---

example, that reported averages are a grand mean, or average of averages, of school scores. As such, they may differ from averages computed using statewide student-level scores.

middle school teachers expressed was that the middle school concept (at least as it is implemented in some schools) seems to place too little emphasis on subject area content.

Most parents in the focus groups also said that the middle school approach is advantageous to their children. An enthusiastic parent asserted, "*I am thoroughly sold on this concept.*"

In the surveys administered as part of this evaluation, Georgia's middle grades teachers and principals reported that they strongly believe that the middle grades program should assure that students master "essential basic skills and knowledge," and that the program should provide "an opportunity to master advanced skills and knowledge" (phrases found in O.C.G.A. §20-2-151 establishing the purposes of middle grades education in Georgia).

Teachers were also asked whether they believe that students in their schools meet these two goals. Generally, they agree that their school's children achieve these goals. However, teachers' reports of goal attainment are lower than their reports of support for the goals (Chart D).

Support for these legislated purposes of middle grades instruction and for the middle grades concept both appear to be linked to academic achievement in both reading and math. Where teacher support for the state's middle grades purposes (as established by O.C.G.A §20-2-151) and the middle school concept (the beliefs and practices that define the middle *school* approach) are higher, students' gain scores are also higher (Table 6). When the effects of SES are controlled for, the only statistically significant correlation is between teacher support for the middle school concept and math achievement ($r=.33$, $p < .01$).[1]

There is also a strong, positive correlation between teacher and administrator support for the four middle grades purposes and support for the middle school concept. In schools where teachers support the state's purposes for middle grades education, they also support the middle school concept ($r=.59$, $p=.00$).

Heterogeneous Grouping and Academic Achievement. There was a great variability of opinion concerning the practice of heterogeneous grouping - grouping students randomly, rather than by ability level. Approximately half the parents in the focus groups felt that our world is heterogeneous and their children should learn to work with all kinds of people. One parent said, "*My child needs a realistic picture of the world.*" Representing the opposing point of view, another parent asserted that, "*The real world doesn't put everybody in the same pot and try to teach them the same thing.*"

Students in the focus groups expressed mainly negative comments about heterogeneous grouping. These high achieving students mentioned that they did not learn as much in the heterogeneously grouped classes. Among their frustrations were more "horseplay" and disrespect for the teacher in the heterogeneous classes, group work where the gifted student had to do the

---

[1] In this report, use of the term "controlled for" in discussions of correlational analyses means that free and reduced price lunch was partialled out of the analysis. That is, the effect of free and reduced price lunch was statistically eliminated from all variables used in the correlation. Appendix B presents the full set of non-partialled and partialled correlations.

work for those who refused, embarrassment about knowing all the answers, and the slower pace of these classes.

The high school teachers in the focus groups had little to say either for or against heterogeneous grouping. Middle grades teachers, on the other hand, were generally positive about the practice. Several expressed the opinion that this grouping strategy facilitates instruction by having more able students act as peer tutors to those students who were struggling. Others mentioned that students were already grouped by ability in mathematics and reading, and that the only true heterogeneous classes were science and social studies. One teacher noted that heterogeneous grouping, like many other educational practices, may be a fad. *"A great deal that we practice in our profession is based on what is popular to do at the time. If you've been around long enough, as I have, you've seen everything become popular at one time or another. Presently, heterogeneous grouping is more of the thing to do than homogeneous grouping."*

Observers found that most schools have implemented a mixed approach to grouping. This echoed comments made by several teachers in the focus groups. Teachers at one randomly chosen middle school reported that, with the exception of math, all classes in the sixth and seventh grades are heterogeneously grouped. In eighth grade, language arts and math are ability grouped, and advanced classes are offered. One team at each grade level serves special education students through an inclusion program, and gifted students are assigned to all teams. The gifted program is organized around social studies, so gifted students attend a social studies class specifically for gifted students.

In the schools completing surveys for the evaluation, teachers' belief in the appropriateness of heterogeneous grouping is not significantly related to their students' ITBS gain scores. In practice, neither heterogeneous grouping nor ability grouping has any direct relationship with ITBS math or reading gain scores. This also holds true when the correlation is controlled for the influence of SES. Further, schools where teachers more strongly believe in grouping are not more likely to group their students for instruction in reading or math. Analysis of Variance procedures show that school SES is not a factor in determining how frequently teachers group their students for instruction.

Interdisciplinary Teaming and Instruction, and Academic Achievement. Another key component of the middle school concept is the creation of "teams" of core academic teachers. Most middle schools visited by observation teams assign teachers to teams that work together to provide instruction in math, science, language arts/reading, and social studies. (The MSIG specifies that interdisciplinary teams must teach these subjects.)

Depending on the number of students in each grade level, there may be more than one team per grade. The extent to which schools are implementing the middle school concept is not related to the number of students on each team. In all four clusters, there are about 100 students on each team.

Teaming is designed to assure that each student is well known by a group of teachers; that instruction is presented as a coordinated, interdisciplinary experience; and that teachers have a common planning time during which they can coordinate lessons and homework, contact students and parents, and attend to other team duties. Providing at least 85 minutes of common planning

time for each core teacher every day of the week, a requirement for schools receiving the MSIG, is also one of the major costs associated with the middle school philosophy.

Many benefits for middle school students were attributed to the team structure. In the focus groups, teachers and administrators said that closer student-teacher relationships, stronger parent-teacher relationships and a more thorough understanding of the needs of individual students are important results of providing instruction through interdisciplinary teams. As a consequence of this improved support and communication, teachers reported being able to do more to help students succeed by tailoring instruction to meet individual needs. Teachers also said they were able to identify problems earlier and easier, give low-achieving students more attention, and address discipline problems in a more structured setting. *"Teachers in the middle schools are going to find out why Johnny can't do well in math. In junior high schools, Johnny will do well or not do well. They're not going to change to help him,"* explained one teacher. *"I used to teach social studies,"* commented an enthusiastic middle grades teacher. *"Now I teach children!"*

Most teachers said that it is difficult to teach in an interdisciplinary manner all the time, and that they teach between two and five thematic units each school year. Even so, teachers at schools that are more fully implementing the middle school concept report that they are more likely to teach interdisciplinary units. There was no statistically significant difference in frequency of interdisciplinary instruction between Clusters 1 and 2. Also there was not a significant difference between Clusters 3 and 4. However, both 3 and 4 had significantly higher frequencies of interdisciplinary instruction (at the .001 level) than did either Clusters 1 or 2. It appears then, that schools that are more fully following the middle school concept offer more interdisciplinary instruction.

In the focus groups, various stakeholder groups reacted differently to using interdisciplinary instruction. Parents had little to say about this practice, although the comments that were made were positive. One parent said that she *"like[d] the way the themes provided a real life context for learning"*. Some parents talked about interdisciplinary instruction having a positive affect on their children.

Students were universally positive about interdisciplinary instruction. They claimed that the time spent working in thematic units was their favorite time of the school year. *"We can see how everything fits together,"* said a middle grade student.

Most middle grades principals were enthusiastic about interdisciplinary instruction. So, too, were middle grades teachers. They said that they enjoyed working closely with the other members of their team, and noted that common planning time was the only way they had time to plan interdisciplinary units. A teacher commented, *"The teaming concept and the interdisciplinary units brought us together whereas before, we were working individually. It was more competitive before these concepts were introduced."* Other positive changes that teachers attributed to interdisciplinary instruction were: a decrease in discipline problems during interdisciplinary units, an increase in attendance, and better student attention during class. The data collected during this evaluation address discipline and attendance throughout the year, but not during interdisciplinary instructional units. Consequently, the focus group participants' perceptions in these area can not be addressed quantitatively. (Plans are being made to address this shortcoming in the second and third years of the study.)

The data collected in this study do suggest that fostering a cooperative work environment for teachers may well be an important factor in improving student learning. In schools where teachers' work environment emphasized accomplishment (teachers working together) rather than power (teachers competing with one another for resources and influence), student gain scores were significantly higher in both reading and math ($r = .24$ and $.26$, respectively, $p<.05$). These environments are significantly more likely to occur in schools that have more fully implemented the middle school concept ($p=.00$).

What impact does increasing interdisciplinary instruction have on students' academic gains? The number of interdisciplinary units taught is not significantly related to gains in either reading or math. However, as discussed in greater detail below, having teachers work together to provide students with interdisciplinary experiences is significantly and positively associated with increases in reading and math gain scores on the ITBS. There is also strong evidence that having teachers working together in interdisciplinary teams has a positive affect on student academic achievement. Such practices are, of course, significantly more likely to be in place at schools that are more heavily implementing the middle school concept ($p<.01$). (Non-implementing schools typically do not have interdisciplinary teams.) Without controlling for the effect of free and reduced lunch, intra-team cooperation was found to have a moderate to strong positive, significant relationship with ITBS gain scores in both reading and math.

The data collected in this study show that as intra-team cooperation increases, so do ITBS reading and math gains. Team commitment was similarly associated with both gain scores. Additionally, interdisciplinary instruction had a moderate to strong positive correlation with gains in math (Table 7). (When the correlations are statistically controlled to remove the influence of free and reduced lunch, these relationships disappear.)

Block scheduling, a practice that is closely aligned with interdisciplinary teaming, has been implemented at some of Georgia's middle grades schools. However, not all interdisciplinary teams use block scheduling. Observation teams found that several schools are having trouble combining block and traditional class schedules. At one school, staff reported that block scheduling is *"in place for each team, and there are no bells signaling a change of periods."* The observers noted, though, that students change classes according to a six period per day format. The only difference is that there are no bells to signal that it is time for the students to move.

At another school, the block scheduling system being used is somewhat hampered by a bell system, but teachers are allowed to ignore the bells and change the daily routine as needed to accommodate team activities. In practice, though, the observers found that this flexibility is seldom used.

Where block scheduling is fully in place, teachers are generally supportive of the practice. According to teachers at one school, longer periods of instruction provide continuity in students' learning and help students retain learning and thinking skills more efficiently. Language arts teachers at another site reported that block scheduling gives students extra time to ask questions and become *"more fully affiliated with the subject matter."* At a third school, teachers told observers that block scheduling is successful because *"students have more time in class concerning the subject at hand that allows the teacher and students to increase guided practice."* This, the teachers said, *"allows teachers to expand on topics"* and gives students more time for

"drill, practice, and closure on specific skills during one class." Teachers at one school saw a drawback in having longer class times. They argued that block scheduling may be ineffective because classes are too long for students' attention spans. (The observation report does not indicate the extent to which teachers at this school have modified their instructional practices to accommodate longer class periods.)

Teachers generally believe that having the flexibility to allocate instructional time during the core academic block increases their effectiveness, and it may be beginning to improve student learning. However, those gains are not reflected in the ITBS reading or math gain scores. In this study, there was no significant correlation between gains scores and the likelihood of core academic teams adjusting the daily learning schedule.

Common Planning Time and Academic Achievement. Common planning time is another aspect of the middle school concept, and is closely tied to interdisciplinary teaming. The Middle School Incentive Grant criteria specify that team members shall have a minimum of 85 minutes of common planning time each day. Activities commonly conducted during common team planning periods include planning for interdisciplinary instruction; conducting parent and student conferences and team meetings; participating in staff development; addressing concerns regarding individual students; and planning and evaluating instruction. A middle grades principal noted that, because of common planning time, "*Teachers have the opportunity to connect with parents.*" Teachers were also enthusiastic about having time to meet with special education and other resource staff as well as time to plan meaningful experiences for their students.

Observers found that teachers at some schools were making extensive use of common planning time, while those at other sites were having problems incorporating common planning time into their schedule. For example, observers at some schools found that core academic teachers have between 90 and 120 minutes per day (two instructional periods) of common planning time while students attend exploratory classes and PE/Health. However, the observers found that at other schools that claim to have implemented common planning time, factors such as scheduling conflicts, lunch duty, responsibility for supervising in-school suspension, and other duties reduce the amount of time that is actually available for team activities.

The middle grades teacher surveys help shed more light on exactly what core academic teachers do during their common planning time, and on how those activities relate to student learning. Two sub-scales on the middle grades teacher survey, Team Cooperation and Team Commitment, have a moderate positive association with both reading and math gain scores. Team Cooperation relates to how well team members work together to establish and accomplish team goals. Team Commitment addresses the fidelity with which team members use their common planning time to attend to team business. A third sub-scale that relates to common planning time, Effective Use of Planning Time, was found to not be correlated with academic achievement. However, Effective Use of Planning Time is strongly and positively associated with both Team Cooperation and Team Commitment (Table 8). While the significant relationship with achievement is eliminated by controlling for free and reduced lunch, the relationship between Effective Use of Planning Time and the Cooperation and Commitment sub-scales remains significant (although it is somewhat less strong, $r = .36$ and .38, respectively, with $p < .01$ in both cases).

When focus group participants were asked about the disadvantages of common team planning, two major themes emerged. First, many core academic teachers were concerned that a weak teacher on a team would reflect negatively on the rest of the team. Second, some of these teachers complained about their inability to meet as a subject area department.

Exploratory teachers had somewhat different feelings about common team planning. In most middle schools, exploratory teachers have fewer minutes of planning time than do core subject teachers. This often leads to poor morale and dissatisfaction among the exploratory teachers. This difficulty was not verbalized by teachers in the very few schools where core teachers were expected to teach their own exploratory classes. (Please note that scheduling practices were extremely variable due to size of school, the need to share teachers between schools, and a number of other factors.)

There was a universal concern among teachers that the master schedule should be built so that common planning time does not interfere with student learning. Most teachers believed that all students learn best in the morning, but some cited research indicating that approximately one-third of all students learn best in the morning, one-third in the middle of the day, and the remaining third later in the afternoon. Several teachers mentioned that they like a schedule where students attended academic classes earlier in the morning and after lunch, with exploratory classes in the middle of the day. They felt that this gives students time to "*recharge their batteries.*"

The effects of common planning time on the master schedule was most frequently addressed in focus groups that contained middle grades administrators. Two major themes emerged. First, it was almost universally acknowledged that giving common planning time to the academic teams means that there is no common planning time for exploratory teachers. This is because it takes the entire school day to give common planning to the academic teams, and because students must be in exploratory classes if they are not together as teams. Also, many administrators said that band and chorus *"run"* the middle school schedule.

Although not universal, most teachers and administrators acknowledged that in order to give team teachers the required number of planning minutes, more staff is needed. One middle grade teacher explained, *"every child has to be someplace at any given time. This takes increased planning for scheduling."* A frequently mentioned frustration concerned the inability to tailor existing computerized scheduling programs to middle grades scheduling. (Most computerized scheduling packages are constructed for a day with seven to nine periods, not three large blocks.) Another common frustration was scheduling to meet the requirements of special programs such as the gifted program and special education. There was consensus, however, that the trouble was well worth the effort. *"I think you have more individual needs in this age group than you do at either end of the educational ladder,"* commented one middle grades administrator.

Another difficulty was scheduling to accommodate teachers who teach in more than one school. This situation was described as a scheduling "nightmare" and severely limited schools from rotating their schedules and implementing equitable common team planning.

Focus group participants frequently expressed great concern for special education students. Several team teachers felt that the exploratory teachers were not being given enough information about students' disabilities. As a result, teachers were unable to make any necessary special

arrangements for these students in their classes. Areas that teachers and administrators thought could be improved included increasing communication with district curriculum coordinators, providing more staff development from within the school's staff, and facilitating sharing of interdisciplinary units among teachers and between schools.

Overall, teachers and administrators indicated a great deal of satisfaction with the communication that now occurs, especially when compared to the junior high school approach. A middle grades teacher summarized the feelings about team communication by saying, "*If you don't commit to communication, it falls through the cracks.*"

Exploratory Courses and Academic Achievement. In the focus groups, observations, and surveys, exploratory courses (typically, art, music, and technology/career education offerings) were seen by both core and non-core teachers, administrators, parents, and students as an important and integral part of the middle grades program.

Based on the data collected in this evaluation, there is no evidence that the exploratory curriculum is associated with ITBS gains in either reading or math. There is, however, no real reason to expect such a relationship to exist. Rather, it is more reasonable to look for the impact of exploratory courses on the degree to which students are prepared to select high school courses. Exploratory courses are discussed more fully in the "high school preparation" section of this report.

Classroom Practices and Academic Achievement. In the focus groups, teachers viewed the middle school concept an opportunity for improved instruction by facilitating interdisciplin-ary instruction and providing the opportunity to adjust lesson length to accommodate instructional needs. These practices, teachers said, resulted in students becoming better learners.

Observation teams found that schools, and individual teachers, use a wide range of participatory instructional strategies. Observers at one site noted that teachers have created a learning climate that is *"highly structured, clearly purposeful, and academically challenging."* Teachers at that school were found to have implemented a curriculum that is relevant to the students, that is integrated, and that is tailored to meet a wide range of ability needs. Observers at many other schools reported similar findings.

Not all observers reported such a unity of purpose and practice throughout the schools they were assigned to visit. At one site, observers found that some teachers engaged students in active learning and critical thinking, using hands-on activities, high-level questions, and cooperative group work. In these classrooms, students appeared to be motivated by positive reinforcement and feelings of success. In many other classes in that school, students worked silently and passively on written, textbook-based assignments and responded to low-level questions. Students in these classes did not seem, at least to the observers, to be engaged in their work and were often off-task.

The diversity of practice found by the observers, and reported in the surveys, leads to the questions, "What are the common teaching practices in middle grades education?", "How often do middle grades teachers use these practices?," and "How are different practices related to student achievement?"

Common Teaching Practices. Factor analysis of the middle grades teacher survey responses identified five broad categories of teaching practice. They are 1) teaching higher order thinking skills, 2) teaching metacognitive skills, 3) assigning written work, 4) assigning small group work, and 5) using human and community resources. Teaching higher order thinking skills, as the term is used here, refers to practices such as asking students to elaborate on or rephrase ideas, teaching students to organize both their thoughts and their materials, and emphasizing cause and effect relationships. Teaching metacognitive skills involves teachers modeling problem-solving skills and thinking out loud so that students can understand how experts think about a subject. Practices involving written work include giving written assignments, having students write in journals and having them revise their own writing. Small group work assignments are those in which students work cooperatively to complete an assignment. Finally, use of human and community resources involves inviting older students and other adults to contribute to the instructional process. (The specific practices that form each of these groups are described in Appendix A.)

Frequency of Teaching Practices. When the survey responses are grouped according to the respondents' major teaching assignment, there is no significant difference in the amount of emphasis core subject teachers and other teachers say they place on teaching higher order thinking skills. In all cases, teachers engage in these activities, on average, several times a week.

Teachers' responses showed more diversity in terms of teaching their students metacognitive skills (how to approach the task of thinking about a topic). Math teachers were the only ones who attend to this dimension more frequently than they do higher order thinking. All groups of teachers report teaching these skills at least once a week (Chart E).

Other teaching practices explored in the middle grades teacher survey include assigning students written work and asking them to work in small groups. Given the laboratory nature of many science and exploratory courses, it is not surprising that teachers in these areas report using small group assignments weekly. Similarly, it seems reasonable that language arts teachers would assign written work most often (Chart F). The differences between these groups were not statistically significant.

Teaching Practice and Achievement. Some practices appear to be particularly associated with increasing
gain scores in schools serving various SES levels (Table 9). It is particularly interesting to note the differences between reading and math practices that relate to increased achievement in schools serving children from less affluent families. For children from lower SES backgrounds, reading scores increase when students receive more "higher order" instruction in their reading classes. However, higher math scores are associated with spending less time on these same types of tasks. Both reading and math achievement appear to be aided by more frequently using tests and quizzes that provide students with feedback on their work and suggest to teachers how well students are learning subject content.

Service learning and community involvement are two general teaching strategies that are part of the middle school concept. Focus group members discussed two meanings for service learning. The first was the community service concept where participants perform a service to the community, such as removing graffiti, organizing a

drive to collect canned goods, and so on. The second was where participants perform a service that is connected to their academic curriculum. An example of this might be giving a performance for senior citizens based on the history of the community.

Community involvement was described as any activity that linked the community with the school. This might include having local business people come to school on career day, or initiating an adopt-a-school program.

Almost all of the examples of service-learning given by the focus group participants were related to community service. These included career day, health fair, medieval fair, lawn mowing, clothes sorting, and mock trials. A wide variety of clubs that encourage community service were mentioned. Kiwanis Club, Rotary, and Junior Achievement were included in this category.

Georgia Heritage Day, where local business people come to the school to demonstrate their crafts and tell about Georgia history, was given as an example of community involvement. Another example was a mentoring program where businesses came to school for forty minutes each week to work with at-risk students.

Parents were very supportive of community service in the schools. They felt it helped students to become more responsible students. A parent noted, "*Middle schools need to be doing more community service type activities.*"

Teachers also approved of community service but felt that facilitating it was very difficult. "*It gives the child a feeling of ownership,*" commented one teacher. In the surveys, middle grades teachers reported how often they use older students, other adults, and the community as an instructional resource. Core academic teachers reported that they are more likely to rely on other adults as in-class resources. Other teachers are more likely to use older students in that role. Across all groups of teachers, each of these practices is used several times a month (Chart G).

There was also some discussion about voluntary versus required community service. Some teachers felt that requiring community service might "turn off" an entire generation of students who would never perform services to the community unless required to do so. A teacher who expressed this sentiment said, "*Go look up the word oxymoron in the dictionary. The example it gives is 'required volunteer.' I mean, that defeats the purpose.*"

In the focus groups, students were ambivalent in their responses about both practices. Several said that they were less than enthusiastic about community service when they first started the project, but afterwards felt a sense of accomplishment. Other students liked the opportunity to work with people less fortunate than themselves. One student remarked, "*You learn about real people. You realize that not everybody may live in an affluent area.*"

While knowing how often various teachers engage in certain practices may be interesting, the important evaluation question is, "Do teachers engage in these practices as often as they should?" To a large extent, this is not a decision that an evaluation can make. Rather, it is something that educators and educational leaders must decide. However, such interpretations

should be made in light of the relationships described earlier in this section: that students' academic achievement is enhanced when their teachers engage in certain practices.

School Governance and Academic Achievement. The middle school philosophy emphasizes that teachers should be empowered to make decisions that affect the children they teach. According to the focus group participants, the principal's office was the primary nexus for decision making at the site level. Most administrators employed a highly participatory model, soliciting input from a variety of stakeholders using a number of formats. Teachers were heavily involved in the decision making process. Academic teams, team advisory committees (a committee of team leaders), grade level committees, subject level committees, full faculty meetings, and "issues" committees (e.g., discipline) were all employed. The academic teams were represented on the school advisory committee, building leadership teams and on steering committees.

Parents were involved through PTA and PTO, parent advisory committees, and representatives of these organizations as members of action teams. "*We're even involved in textbook selection,*" according to one middle grades parent. Administrators participated on middle management teams and various committees. Students participated through student council and student government. Some business partnerships existed. Most teams and committees were standing teams. Some were ad hoc "action teams" created to address a specific issue before disbanding.

Teachers, administrators, and Board members held the strongest roles in policy making. Teachers' primary roles were in identifying and initiating policy change proposals. As the "front line of service delivery," teachers were best positioned to recognize and experience opportunities for improvement. Sometimes teachers were empowered to make and implement decisions. More often, teachers' issues were carried to the administration by representatives via teams or committees. Teacher representatives sat on many standing policy making committees and had a direct role in establishing policy.

Some middle grades administrators used their own judgment concerning when to "*just make a decision and get on with it,*" when to solicit input and reserve ownership of the ultimate decision, and when to share or delegate decision making authority to others. Students typically had a relatively minor role in policy decisions. Student government appeared to have a greater emphasis on civics and campus life than on establishing a student voice in school policy making. Many schools had no student government. On occasion, student input was solicited by survey.

Parent Teacher Organizations (PTOs) were the primary vehicle for parental involvement in school policy. A middle grades parent commented, "*We feel our input is considered when decisions are made.*" Although PTO's primary role appeared to be supporting school service delivery and relaying information from the school to parents, many schools engaged PTO leadership and committees in policy setting. PTO's had a particularly strong role in policy setting during schools' transition from junior high school or elementary school formats to the middle grades.

There were few vehicles for community involvement in school policy setting. Other than school-business partnerships (which were primarily service and support-oriented), the only

significant community involvement was reported to occur at times of important school transition, such as during the conversion to a middle grades format or as part of a county school consolidation initiative.

Most administrators employed, and were praised for, a collaborative, participatory, consensus-oriented style of decision making. Where appropriate, most administrators invited involvement and solicited input, primarily from teachers, but also from parents, and less so from students and community representatives. Part of the decision making and governance system was a latticework of standing and action committees that addressed a range of day-to-day and strategic issues that middle schools face. While principals were the primary decision makers, principals frequently empowered and encouraged "*pushing the decision out into the organization.*" Many decisions were made at the committee level, by the committee.

A middle grades principal who advocated collaboration commented, *"The middle school has given a lot of power back to the teachers and they do a lot of their own decision making. The academic team, together, makes the decisions. In an effort to determine how we would get our block schedule organized, we had an entire faculty-wide meeting. We voted on the type of block schedule we wanted ... and the final decision was not the principal's. It was with the faculty. And we do many things that way ... [but] there are some things that the administrator has final authority on. It almost needs to be because that's where the buck stops."*

A middle grades teacher participating in the focus groups explained, "*I don't think I've ever met [an administrator] who wasn't receptive [to faculty input]. The decision is in the principal's hands, but he listens to his teachers."* Reports from several observation sites confirmed the perception by both faculty and administrators that, shared governance notwithstanding, the principal is ultimately the "boss." At one school, observers noted that teachers are comfortable with the notion that *"the principal sets the teams, and the teams meet and help set policies. However, the 'buck stops with the principal,' so he will have the final say."*

Although the concept of shared governance was common in most of the middle grades programs involved in the observations, some schools were found to be having difficulty putting the philosophy into practice. Many schools reported that teachers wanted input into policy implementation, but not the responsibility for actual decision making. Observers at one school wrote that the principal "would like the teachers to have more input into the decision making process on school policy" but, according to a guidance counselor at the school, "the teachers want [the principal] to make the decisions."

Schools handled a variety of policies in different ways. Grading policies, for example, varied: Some schools used a standard grading system, others used pass/fail. Some schools included exploratory course grades in the GPA, while others did not. Finally, some schools had a policy of assigning home work and tests in exploratory courses. Others had a policy of not doing either.

Each of the constituencies seemed satisfied with their role and the overall method by which decisions were made. One middle grades teacher explained, "*As a teacher, one reason I'm really happy to be at our school is because I feel very supported by the administration."* Another added, "*As a teacher, I've never felt that my opinion didn't count.*"

Among focus group participants, there was a general consensus that the public was neither aware of nor particularly interested in the middle grades concept, what middle school policies were, and how they were developed. Despite a general openness in how policies were formulated, and in some cases a fairly serious effort to communicate school issues to the public via a variety of media, few in the general public seemed to be interested, according to the focus group participants. Even most parents who were involved in the schools focused their involvement only around issues that affected their child.

One parent noted, "*I've never known of a case where the general public cared enough [to find out how policies are made]. They want to know that their children are being taught and treated fairly. They don't go beyond that. They've got too much else to do [in their own lives].*"

Some parents wanted to see more parental involvement and participation, but the problem was less an issue of access denied, and more an issue of lack of parental interest or awareness of opportunity.

There were a number of suggestions for ways to improve the governance of middle grade schools. Most were centered on improving and expanding community and parent involvement. Other issues were related to the role of the school vis a vis higher authorities. Suggestions here included expanding the range of issues under local (site-based) control and improving the process for communicating local issues to local boards of education and the Georgia Department of Education.

While the general public was reported to be both disinterested and largely unaware of middle grades issues, this did not appear to be the intent or result of middle school policy making practices. The practices tended to be both open and solicitous of broad involvement. Middle schools, however, had been unsuccessful at attracting the attention of the general public. Administrators, teachers, parents, and community members had no new suggestions as to how to raise interest and stimulate involvement. Suggestions offered included soliciting and involving business partnerships and improving the quality of public relations and media communications.

Statewide, it appears that ITBS gain scores are higher in schools where there is greater support for community involvement in decision making. This relationship becomes non-significant when the correlation is controlled for SES. Neither teacher support for community involvement in instruction nor teachers following uniform policies regarding students were significant in either controlled or non-controlled analyses (Table 10).

While the information presented above could be interpreted as showing that more affluent communities (those in which there are usually higher gain scores as a function of SES) make greater efforts to involve the community in school decision making, the data in Table 11 calls that conclusion into question. Analysis of the responses by free and reduced lunch quartile shows that at least according to teachers in the schools, efforts to reach out to the community are actually higher in schools with greater numbers of children receiving free or reduced price lunch. Further research is needed before making any claims about how and why various types of schools involve the community in their management and/or instructional processes.

Staff Development and Academic Achievement. In the middle grade schools involved in the focus groups, staff development sessions were offered quarterly in urban districts or during region wide in-service days in rural districts. Teachers in this study felt satisfied with the frequency of sessions. There was a wide range of staff development content. Courses were offered on curriculum instruction, motivation, transfer of theory to application, teaching students with special needs, teaching study skills, technology, community resources, and discipline. Of all the topics at staff development sessions, most teachers chose courses dealing with curriculum or content instruction. Courses were taught by teachers, district staff, or outside consultants.

Whereas teachers were required to attend some specific classes in order to retain their middle school certification, they could also choose to attend electives. Teachers generally agreed with the comment by a middle school administrator, *"there are extensive opportunities to enhance classroom teaching."* There were also professional development opportunities outside the district-sponsored workshop structure. One teacher commented, *"If you find something you're interested in that's not in the bulletin, you can apply to the staff development center to get approval for credit."*

Focus group participants felt that staff development opportunities were accessible and those classes that were required or expected to be well-attended were offered at several local sites in addition to the central district office. Because staff development bulletins were offered every quarter (or at regional in-services for smaller districts), teachers felt they had several opportunities to access courses. For those courses that were required for middle school certification, a teacher pointed out that *"sometimes stipends are offered for taking courses."*

Generally speaking, focus group participants felt that their professional development needs are being addressed. An assistant principal mentioned an "Assistant Principal Association" and a teacher referred to a "Teacher Council" that were available mechanisms to allow teachers and administrators to request specific courses or issues regarding middle school education. Another teacher said, *"if you have a need for your faculty, you can call the staff development director for the county for onsite courses. The district is very open and accessible."* Another middle school principal added that *"the district asks for a 'wish list' of opportunities for staff development at the beginning of every year"* from teachers.

Concerning the effectiveness of staff development delivery, teachers agreed with a middle school administrator who said, *"The pattern of teachers seeing it in action and watching other teachers perform is a very effective method. The courses that concentrate on practical applications are most helpful and tend to change behaviors more so than classes that are lecture-based."*

A teacher added, *"Just like what we do in the classroom, the coursework instructor should offer content for the visual and the auditory learner. They should be interactive so that they are hands-on, interesting, and will get you involved."* A middle school administrator commented that evaluations of staff development sessions are used to determine the content of future sessions. *"The district determines the courses by the number of requests for staff development [in a particular] area or by what has been successful in past opportunities."*

Teachers were quick to decide what kinds of sessions were most effective. One teacher said *"the courses I elected to take were better than those that were prescribed by the district or those that the entire faculty chose as a group."* Another teacher thought that *"The staff development courses that use technology in the classroom were very beneficial."*

One administrator recommended that staff should be allowed to discuss the change process associated with new policies. *"It's been difficult to get staff development to teachers who are not excited about taking necessary course work. When you're teaching something new and teachers are holding on to older practices, it's very tough to even get folks to attend. They were scared, angry, nervous, threatened regarding these changes in the philosophy."*

While an urban area teacher commented that, *"there are ample workshops to choose from that apply to middle school learners,"* and another teacher stated that issues regarding the *"needs of the middle school child"* had already been sufficiently addressed, a rural area teacher disagreed. *"There is a broad range of staff development issues, but not many specifically for middle schools."* One teacher felt that *"there were not many choices in exploratory subject matter."* A middle grades school administrator recommended that there be more courses on teaching techniques particular to middle schools. *"Often those folks with secondary school background don't know how to teach reading skills within their content areas, say science or social studies, in the middle school. It would be beneficial to offer workshops helping teachers teach reading skills through the content areas."* One teacher recommended that districts should *"change the people who teach [the workshops]. You always see the same faces."* Overall, the variability of answers concerning the availability and quality of staff development opportunities made generalization impossible.

One teacher complained about the lack of support from their building leadership because the principal was unfamiliar with the middle school model. Under the MSIG criteria, at least 50% of the core academic teachers in a school receiving incentive grant funding must have a middle school certification or endorsement. However, there is no such requirement for middle school principals. A middle school teacher noted, *"Middle school administrators need middle school training. Unless you've taught middle school, you really don't understand middle school. A certification for middle school administrators would help them understand the necessary issues associated with this group of kids and this style of teaching."*

In schools where teachers give the helpfulness of staff development activities higher ratings, ITBS math gain scores are higher. This is true whether the analysis is controlled for SES ($r = .31$, $p < .05$), or not ($r = .24$, $p < .05$). In non-controlled correlations, reading gains are also positively associated with frequency of staff development ($r = .27$, $p < .05$).

The Effect of SES, Instruction, and School Structure on Student Achievement. The preceding sections of this report describe the ways in which SES, instructional practices, and school structure individually contribute to students' academic achievement. To help understand what effect each of these categories has on academic achievement, a regression analysis was conducted for both reading and math gains. The goal of this analysis was to determine to what extent the items listed above account for differences in academic gains.

Because SES has been shown to have such a strong association with academic achievement, it was entered in the first step of the regression. Teachers' beliefs and instructional

practices were then entered. This left the remainder of the variance to school practices. The specific categories of variables included in the regression equation were:

1. Free/reduced price lunch participation
2. Teacher beliefs about the middle school concept and the state's purposes for middle grades education; and teacher work routines including grouping, interdisciplinary instruction, team activities, and instructional practices
3. School practices including community involvement and staff development.

The results of the regression analysis are presented below.

Reading. The regression analysis shows that, by itself, free and reduced lunch participation accounts for 34% of the variance in ITBS reading gain scores. That is, just over 1/3 of the extent to which an individual school's average ITBS reading gains vary from the average gain is due to the socio-economic status of students served at that school. When teachers' professional beliefs and teaching/teaming practices (as measured by the middle grades teacher survey) and school structure are added to the equation, the amount of variance accounted for rises to 60% (Chart H). The remaining 40% of the variance is attributable to other, unknown factors.

Math. In this analysis, free and reduced lunch participation rates accounted for only 20% of the variance in gain scores. Teacher beliefs and practices, and school structure, combine to add another 33%. Thus, in this case, a total of 53% of the variance in math scores can be accounted for by the variables in this study (Chart H).

Overall, this analysis suggests that math scores are not affected as greatly by SES as are reading scores. It expands that finding by pointing out that instructional and structural practices have a greater affect on math achievement than they do on reading achievement. In practical terms, these findings have two implications. First, they show that instruction and school structure have an important effect on student achievement. This, in turn, makes even more meaningful the finding that certain elements of middle school structure and practice foster greater achievement and that no middle school elements restrain achievement. Second, these findings show that additional research is needed to identify and positively influence the remaining factors that account for as much of the unexplained variance as possible. Promising areas to investigate include student motivation (which may be a co-variate with instruction and structure), teacher morale, and the extent to which elementary schools prepare students for the middle grades.

Conclusions about the Effect of Georgia's Middle School Program on Student Mastery of Essential Basic Skills and Knowledge and on Student Opportunities to Master Advanced Skills and Knowledge .

Does greater implementation of Georgia's middle school program affect student learning? As described above, some factors show a direct, positive correlation with academic achievement. These factors include teacher support for the middle school concept, teachers working together in interdisciplinary teams, and school support for community involvement in the educational process.

Other enabling factors appear to support the implementation of positively correlated factors, even though these enabling factors are not by themselves associated with academic gains. A school climate in which teachers feel that accomplishment is emphasized over power is an

example of this. At schools where the middle school concept is more fully implemented, teachers report that the school culture is more likely to value accomplishment rather than power. At schools where there is an accomplishment-oriented culture, student believe that they have more positive relationships with their teachers, and believe that instruction is more effective. Also at these schools, student gains in both reading and math are significantly higher.

While several middle school characteristics were found to be directly or indirectly associated with higher achievement, none of the factors examined in this evaluation were negatively associated with student gains in reading and math. In other words, there is no evidence that implementation of the middle school concept, as it is being applied in Georgia's schools, hinders student learning. (Later, in the "Preparation for High School" section of this study, we will report that there is also no statistically significant difference in the degree to which ninth grade core academic teachers report that students are prepared to enter the ninth grade, regardless of the extent to which the middle school concept was implemented at their students' middle grades school.)

The elements of the middle school concept that are associated with increased student achievement typically are also associated with socio-economic status. The schools that are more fully implementing the middle school concept tend to serve students from more affluent families, and these students tend to experience higher levels of academic achievement than do students from lower SES backgrounds. However, the regression analysis clearly shows that teacher and school practices cumulatively play a substantial role beyond the impact of SES.

On-going collection of longitudinal, school-level data will provide DOE with a way to determine whether changes in structure and practice at any one school are associated with improved academic achievement. After the second year of data collection, we will begin to be able to address whether increasing the extent to which the middle school concept is implemented at a particular school improves the academic performance of children at that school. (It is the lack of such data that precludes making causal inferences at this time.)

Despite the limitations of having only cross-sectional data, an interesting phenomenon that is worthy of further study is that SES appears to have a greater effect on reading achievement than it does on math achievement. This study supports other findings that Georgia's students typically score better on the math section of the ITBS than they do in reading. However, the regression analysis cited above also suggests that SES has a greater influence on reading achievement than it does on math gains, and that instruction and school structure both account for more of the change in math than in reading (see Chart H). Further research into this apparent phenomenon seems worthwhile.

The Effect of Georgia's Middle School Program on Student Transition from Childhood to Adolescence

The second element of Georgia's legislated purposes for middle grades education is assisting children in the transition from childhood to adolescence. Focus group participants frequently said that they think the middle school concept helps ease the transition from childhood to adolescence. Most middle grades parents, teachers, and administrators saw the middle school providing an appropriate transition from the complete nurturing environment of the elementary school to the highly independent environment of the high school.

This section of the evaluation examines the extent to which implementation of the middle school concept is related to achievement of this goal. The three elements of middle grades programming that will be explored are:

- how instruction differs across grade levels
- the effectiveness of advisory and/or mentoring programs
- student and teacher perceptions of the school environment.

Differentiation of Instruction Across Grade Levels. This section of the evaluation report explores the extent to which sixth grade and eighth grade math and language arts teachers, by implementation cluster, use different teaching and grading practices. The underlying assumption, which originated with the discussion groups that helped establish the criteria for this evaluation, is that facilitating the smooth transition from elementary to high school, and from childhood to adolescence, necessitates using different teaching, testing, and grading strategies as students mature. Consequently, the strategies used by 6th and 8th grade teachers should differ to some degree.

Teaching Strategies. Six areas of instructional practice are considered in this section of the evaluation. These are the same teaching practices used in the analyses in the preceding section of this report: emphasizing students acquiring knowledge, emphasizing the importance of getting good grades (note that these need not be dichotomous), teaching thinking skills, teaching metacognitive skills, assigning written work, and assigning small group work. (Again, please refer to Appendix A for a more complete discussion of these six dimensions.) Chart I shows the degree to which language arts instructional practices change between 6th and 8th grades in the four implementation clusters, according to responses provided on the middle grades teacher survey[1].

The chart shows both the direction and the magnitude of each change. A positive number indicates that the practice is more frequently used in the eighth grade than in the sixth. A negative number means that the opposite is true; that the practice is used less often by eighth grade teachers.

In Chart I it is apparent that, on average, the greatest difference in teaching practices in Cluster 1 schools is the increased use of written work by 8th grade teachers. In their final year in these middle grades schools, students also experience a greater emphasis on getting good grades. (As the term is used here, getting good grades is by no means the only classroom-level measure of

---

[1]The stem for all instructional practices questions was "On average, how often do you use the following instructional practices in your classroom?" The response metric was 1=Less than once a month; 2=Several times a month; 3=Weekly; 4=Several times a week; 5=Daily.

achievement. Ideally, getting good grades should go hand-in-hand with gaining knowledge and developing higher order thinking skills.) In Cluster 1 schools, there is little or no change in the extent to which teachers use the remaining teaching strategies are used.

In Cluster 2 schools, which were shown in the previous section to be the schools that are least likely to product higher ITBS gain scores, 8th grade teachers report that they are less likely than 6th grade teachers to engage students in any of the six strategies explored in this report. Cluster 3 schools report a mixed bag of increases and decreases. In Cluster 4 schools, 8th grade teachers assign small group work far less often than do their 6th grade counterparts. In the other five areas, changes are either minimal or non-existent. One possible interpretation of this finding is that teachers in these most fully implementing schools are making the greatest effort to smoothly transition their students from highly group-oriented elementary schools to highly individual-oriented high schools.

In interpreting these data, it is important to remember the question that is being addressed in this part of the evaluation: How do practices differ between 6th and 8th grade? Chart I, and the charts presented in this section of the report only represent the extent to which teachers report that their practices differ across grade levels. The charts do not indicate how much emphasis any particular practice or strategy receives. For example, Chart I shows that on average, Cluster 1 schools increase their emphasis on students getting good grades while Cluster 4 schools do not. However, it would be *inappropriate* to conclude from these charts that Cluster 1 schools have higher expectations for their eight graders' academic achievement than do Cluster 4 schools. Conclusions about the magnitude of emphasis teachers place on any of these practices can only be drawn by referring to Appendix C, which provides a full set of charts of teachers' responses to these survey items. In the case of teacher emphasis on students getting good grades, Appendix C shows that the Cluster 4 schools stay constant at 3.2 across all three grade levels - teachers emphasize this point a little more often than once a week. Cluster 1 schools start at 2.9 in the 6th grade, the lowest 6th grade score of any of the four clusters, and rise to 3.3 in the eight grade. Thus, the *correct* interpretation of the data presented both here and in Appendix B is that Cluster 1 schools place less emphasis on getting good grades in the 6th grade, and increase that emphasis over time until it is about the same level as is present in Cluster 4 schools across all grades.

Chart J presents the same information as Chart I, except that the Chart J data are based on the responses of math teachers, not language arts teachers. Here, the greatest change across clusters is in the frequency with which teachers assign written work. Math teachers in Cluster 1 schools increase the amount of written work they assign as students get older. In all other clusters, the frequency of assigning written work decreases over time. Again, however, Appendix C shows that there is very little difference in how often 8th grade teachers in the four clusters assign written work. There is virtually no difference between Clusters 1 and 4.

Without an analysis of the possible differences in teaching practices at the elementary schools that feed the schools in this study, it is difficult to interpret the extent to which the changes reflected here and in Appendix C are the result of efforts to serve differing student needs. (Teaching practices at the feeder schools were not included in this study.) It is clear, however, that no one cluster is considerably more or less likely to modify the instruction that children receive as they progress from 6th to 8th grade. The critical difference is in the way that these changes occur and the extent to which they help students move toward the types of skills that are needed at the

high school they will attend. Given its statewide focus, this report cannot address such issues at a local level. However, it would be very appropriate for this evaluation to serve as a basis for local-level conversations concerning the alignment of experiences and expectations that students encounter throughout grades K - 12.

Testing Strategies. Language arts and math teachers' testing and grading practices were also examined to determine whether and how they help students in the transition from elementary to high school. As before, the underlying assumption is that practices should change to both accommodate the changing abilities of students and to smooth the transition from elementary to high school. The testing strategies considered included the use of: short answer items, essay items, multiple choice/matching items, true/false items, math/science problems, and performance assessments. The results of this analysis are presented in Chart K.

As with the teaching strategies, the relationships here are fairly complex and must be viewed in light of the data presented in Appendix C. For example, the use of performance assessments is seen to increase in Cluster 1 schools and decrease in Cluster 4 schools. However, teachers in both schools report using performance assessment, on average, to about the same degree in the 8th grade (3.3 in Cluster 1; 3.2 in Cluster 4). The difference reflected in Chart K is due to the very different practices used by 6th grade teachers, on average, in each of the two clusters. As was seen with the teaching strategies data, none of the clusters appear to be static in their use of testing strategies.

Chart L presents testing strategies used by math teachers. Although Cluster 4 schools have the greatest increase in math teachers using math and science problems on tests, teachers in these schools are the least likely to use these types of questions in the 6th grade. With the exception of short answer items in Cluster 1 and 2 schools, the use of all types of test strategies except math and science problems declines as children progress from the 6th to the 8th grade. However, it can be seen from Appendix C that in most areas, these questions are used to about the same degree across all four clusters in the 8th grade. This further supports the notion that the Department of Education should examine the feasibility and utility of conducting additional research that shows how well the widely differing 6th grade practices conform to students' elementary school experiences prior to making any recommendations for change in middle grades practice.

Grading Strategies. The final data element in this section concerns how teachers assign students' grades. The frequency with which teachers use four grading strategies was explored. These strategies included tests and quizzes, projects, homework, and class participation. Language Arts teachers' reports of changes in the use of these practices is shown in Chart M. The change that, at least on the surface, appears most meaningful is that Cluster 4 schools both show the greatest decline in frequency of using projects and class participation as a basis for students' grades and are the least likely to use these factors when assessing 8th grade students' learning. Across the four clusters, there is little or no change in either the 8th grade use or the longitudinal change in the use of homework and tests and quizzes as a bases for language arts grades.

Changes in the grading strategies used by math teachers are also fairly flat across the clusters (Chart N). There are slight differences in the extent to which 8th grade teachers in the various types of schools use these strategies. Cluster 4 teachers are the most likely to use tests and quizzes, and projects, as a basis for assigning grades. Cluster 1 and 2 schools are very slightly

more likely to have math teachers that use homework and class participation as a basis for grading students.

It is difficult to arrive at a meaningful quantitative analysis of the extent to which changes in teaching and grading practices in the various clusters may or may not assist students in the transition from childhood to adolescence. A more meaningful finding may be that where there is differentiation between 6th and 8th grade practices, more often than not Cluster 1 and Cluster 4 schools are moving in opposite directions. As in several other instances, more research is needed to find out whether one cluster or the other has chosen a path that better helps children make the transition from childhood to adolescence or if the differences are an artifact of the different needs of the children served by these schools.

Advisory and/or Mentoring Programs. Advisory classes are typically considered an important part of the middle school concept; they are one way that schools can work toward promoting students' socio-emotional growth. They are also a primary strategy for fostering strong, developmentally appropriate bonds between each student and at least one adult in the school.

Despite the prominence of advisory programs in much of the middle grades literature, this aspect of the middle school concept does not seem to have been widely accepted or consistently implemented in Georgia. According to the Middle Grades Teachers' Survey, most schools have an advisory program, involve all students in the program, and typically conduct advisory classes two to three days each week. Most advisory session last no more than about one-half of an hour, and have about 25 students in each session. However, it is quite unclear whether the teachers within many of the middle schools were talking about the same thing when they provided the data cited above. In response to the question "Is your teacher-based advisory program offered during team block instructional time?" teachers at 17 schools unanimously said, "No." Only two schools unanimously reported "Yes." At the remaining 52 schools that said they have an advisory program, the staff were not in agreement. Indeed, at six sites half of the teachers answered "Yes," and half answered "No."[2]

Advisory Programs. Given the apparent confusion reflected in the surveys, it is not surprising that focus group participants reported that their schools' advisory programs take widely varying forms. At times, teachers, administrators and parents had difficulty even defining what they meant by an "advisory program." Arriving at a common definition was complicated by the fact that student advising occurs in both formally defined advisory programs and informally in the context of normal daily student-teacher contact. In fact, one of the primary characteristics of the middle school concept noted by teachers, administrators, and parents was that the team structure is designed to allowed the academic team to know students well, to recognize problems early, and to take action, on both an ad hoc basis and through the formal advisory program. While all focus group participants said that their schools work to "advise" students, many did not have what they considered "advisory programs". Typical comments were, "*We don't do it officially. We just do it.*" and "*We don't think of advising as a 'program'.*"

---

[2]When analyzing the survey data, all individual responses relating to the advisory program were eliminated if a teacher said their school had no such program. Thus, the confusion described above does not result from answers given by an individual who does not know whether the program exists at their school.

Advisory program content fell into a number of specific areas. Many focus group participants said the program helps students plan course work and explore career options. Working with school and life tools such as personal growth, conflict management, friendship, test taking, and study skills had a high priority. Remediating academic deficiencies and dealing with individual academic and social problems also occupied a large share of advisement time. Peer mediation (overseen by counselors), peer helpers, and sending progress reports home to parents were also seen as elements of the advisory programs.

Many of the activities viewed as advising fell into the prevention/skill building category. Many focus group considered efforts aimed at supporting and guiding students' personal development (e.g., conflict management, anger management) as elements of an advisory program. Two generic approaches to advisory programs were noted:

- Classroom oriented programs, sometimes called "Advisor/Advisee" or "AA" programs where classes met regularly (e.g., 15 minutes twice a week, 30 minutes once a month), sometimes in a smaller group setting, where a variety of subjects were addressed and activities conducted. Classes could be taught or facilitated by teachers, administrators, or counselors. Many of these classes centered around content described earlier. These programs were sometimes a part of homeroom classes, in the academic team block, in exploratory courses (e.g., Career Connections) or in a program called "Quest".
- Responsive advising, which is a more ongoing, "as needed" approach to advising. One teacher commented that, "*Advising works better on a daily basis.*"

Focus group participants reported that there were two basic advisory programs: Student Assistance Program (SAP), based in the counselors office; and Student Support Team (SST), which is primarily a function of the core academic team. In the SST model, teams teachers and others meet to formally discuss students, focusing on addressing student needs and problems. Both of these programs lead to direct and targeted intervention, often during teachers' common planning time, and frequently including parent-teacher or student-parent-teacher conferences. They are designed to be responsive rather than programmatic.

While most schools used one or both of these programs, many schools also focus their advisory activities on the previously mentioned formal advisory periods, or homeroom activities.

Observation reports also indicate that implementation of the advisory program across the state is generally weak when compared to the generally recommended structure of advisory programs. It is unclear, however, whether the programs that are in place are actually weak in terms of meeting students' needs. Many teachers, parents, and administrators felt that, as a result of their advisory programs and activities, students developed better relationships and were more accepting of others. Teachers and administrators also reported that discipline problems were reduced compared to the level experienced under the junior high school concept and noted specific examples of student successes that they attribute to the advisory program.

High school teachers and administrators articulated important differences between high school and middle school advisory programs. High school advising tends to be more career oriented while middle school advising is more oriented toward social and emotional issues. Some high school teachers and administrators felt more emphasis should be placed on advising and

preparing eighth graders for high school success. One program was noted in which eighth graders went to their prospective high school to meet with ninth graders to discuss how to prepare and what to expect when they arrived in the fall.

A high school administrator raised the issue of the school's role in children's lives. "*We have to make a decision whether the schools need to be responsible for the social well being of a child or whether we should focus on academics. What business are we in? To be their surrogate parents? To be responsible for them after school? We could hire, structure, and instruct in different ways depending on what our role was. Schools are positioned to be able to do all these things, but is it the role of the school? It's all related to resources. Mentoring [and advising] is a good idea, but it takes time and money to administer. That takes away from other uses of that time and money. We need to decide how far our role extends.*"

Most focus group participants who had advisory activities in place reported that they are improving, or planning to improve, their advisory programs in several areas. These included:

- increasing the overall level of advising activity;
- providing more time for teachers to work with students in an advising capacity
- developing better topics for advisory meetings;
- orienting sixth and seventh grade advisory programs toward life skills, and eighth grade advisory programs toward academic skills; and
- using the advisory program to better prepare students for high school.

Mentoring Programs. The general definition of a mentoring program was much more clearly understood and consistently defined than advisory programs. A mentoring relationship was understood to be an ongoing relationship between a student and an adult other than a parent for the purpose of addressing a defined student need. Many schools did not have mentoring programs. In an environment in which middle schools address daily problems both large and small, mentoring programs did not appear to be a high priority in those schools that did not have one.

Schools that did not have a mentoring program noted that they do have access to social workers and other county services for students at risk. Where mentoring programs exist, they are almost exclusively directed toward students at risk who were experiencing problems either academically, socially, or behaviorally. Only rarely were successful students involved in school-facilitated mentoring relationships.

The source of mentors varied. In differing proportions depending on the school system, mentors included teachers, administrators, and counselors in the school. In one school, 97% of the teachers served as mentors. People from the community such as retired teachers, county agency workers, local ministers, and local businesspeople also served as mentors. In some cases mentoring programs were managed by the county. In other cases, mentoring programs were administered by the school counselor.

In all cases, entering into a mentor relationship was voluntary on the part of the students. Though none of the students who participated in focus groups were or had been in a mentor relationship, teachers, administrators and one mentor reported that most students valued the opportunity and the relationship. The one mentor who participated in the focus groups characterized his task as enormously challenging.

Students were usually identified as candidates for a mentoring relationship by their academic team. This is consistent with the theory and practice of academic teams recognizing problems students experience and taking action to address them. Parents initiated the mentoring process. Parental involvement and support was viewed as particularly important for the success of the mentoring relationship-- and an occasional source of friction.

Teachers and administrators provided anecdotal evidence that mentoring relationships "*can make a difference in children's lives.*" Specific examples included improved behavior and the ability to handle situations better. One administrator presented a long list of benefits which were attributed to his/her school's extensive mentoring program. These benefits included improved academic achievement, improved social skills, and an improved focus on school.

One administrator felt that mentoring relationships were effective for about half of the mentored students. Another felt that 80-90% of mentored students showed improvement in the problem areas such as grades, attendance, and disruptive behavior.

There was particular concern about safety issues in mentor relationships. Procedures to check the history and credentials of prospective mentors and to monitor the relationship were seen as extremely important. Allowing uncredentialed people to deliver services to students was seen by some as dangerous. "*Mentoring is wonderful on paper, but you need to check your mentors thoroughly. Schools have to be tough in this area,*" one teacher warned.

School Environment. The middle school environment, and the expectations that are or are not placed on students within that environment, is a key point in Georgia's on-going statewide debate about the efficacy of middle schools. In informal conversation, in the discussion groups that helped focus this evaluation, and in the observations and focus groups (as reported elsewhere in this paper), various stakeholders and other interested citizens have contended that the middle school concept produces an environment that is more likely to "coddle" students than it is to provide them with a good academic foundation.

There is no doubt that the middle school concept, as it is described nationally and as it is implemented at some of Georgia's middle grades schools, places an emphasis on providing the caring, nurturing environment that middle school advocates say is necessary to help students make the transition from childhood to adolescence. In the focus groups, some participants credited this environment with providing a better and more friendly environment for learning, personal growth, ethical development, and improved self-esteem. Better personal development, including a happier, more secure, better disciplined, and less stressful outlook toward school, was also cited as a benefit of the middle school philosophy. Focus group participants also felt that middle school students gain improved social skills, including cooperative teaming skills and more mature decision-making.

A less competitive and more cooperative atmosphere was also mentioned frequently. "*Middle grades schools are people schools. Students learn to work together with other people,*" a middle school teacher commented.

Some focus group participants felt that students would be better off with less nurturing and more independence. One high school principal asserted, "*When these kids are thrown into the high*

school setting, it takes half a year for them to adjust. You shouldn't be treating these kids like they're elementary school kids. They need to have an opportunity to mature, to accept responsibility. They haven't had any freedom and when they get it at high school, they don't know how to handle it."

As a basis for exploring the effect of the middle school environment on students, the middle grades teacher and student surveys both included school climate items. The teacher survey gathered information on whether teachers emphasized the importance of students gaining knowledge or getting good grades. It also asked whether the school climate tended more toward emphasizing power or accomplishment. The student survey asked students about their relationship with their teachers.

The data collected for this study show that there is a fairly strong, positive and significant correlation between students' perceived relationship with their teachers and academic gains in both reading and math. Not surprisingly, students also achieve higher gain scores in schools where they feel the instruction is more effective. Teacher reports of the culture that prevails at the school also figure in to this mix. Where teachers say that the school emphasizes accomplish-ment, students do better on the ITBS. This occurs significantly more frequently in Cluster 4 schools than in Cluster 2 schools (Table 12).

Analysis of variance shows that only teachers' perception of an emphasis on accomplishment varies among the implementation clusters that were described earlier in this paper. Schools in Cluster 2, those that are weakly implementing the middle school concept, rate significantly lower in this dimension than do schools in either Cluster 3 or Cluster 4. There is no significant difference between Cluster 1 schools and Cluster 3 or 4. This suggests that, in terms of maintaining a positive and academically productive environment, poor implementation of the middle school concept may be worse than no implementation.

In addition to its direct relationship with academic performance, teacher perception of school environment is important for another reason. Maintaining an accomplishment-oriented environment, rather than one that only emphasizes getting good grades, is strongly correlated with both student perceptions of the student-teacher relationship and instructional efficacy. These relationships hold when the correlation is controlled for SES (Table 13). As was noted in Table 12, both of these factors are correlated with academic achievement.

There was consensus among the focus group participants that middle schools appropriately addressed the social and emotional needs of young adolescents. Those associated with middle schools felt that integral components of the middle school model-- interdisciplinary units, the team approach, flexible scheduling, and exploratory courses -- fostered social and emotional growth as well as academic growth. Middle school teachers, in particular, felt that these components helped produce students with strong lifelong learning skills, not just skills useful for high school. One middle school teacher explained, "*we're not preparing kids just for high school. We're geared toward student success and helping students find out what areas they're good at. Some of the skills that we teach, they may not get in high school, especially in exploratory areas. They may be good in art and hopefully they'll find that out and take more classes like that.*"

A middle school principal agreed. "*Some things should be firm, but problems of middle school kids are not fixed. The opportunity to explore exploratory classes is important. At this point*

most kids haven't made up their minds as to what they want to do in life, let alone high school. These classes allow them to find out who they are, what their capabilities are, and what direction they may want to go in."

Many focus group members felt that middle schools foster the confidence that students need to tackle high school and beyond. A middle school parent said, *"my child really feels close to his teachers and the kids on his team. It's like a family situation and that's real important for this age, for them to feel like they've got a home base. There's less anxiety coming to school."*

A middle grades teacher felt similarly. *"When you have smaller groups, there are more opportunities for students to emerge as leaders. This helps develop confidence needed in high school."*

A high school teacher observed, "*It's easy for a kid to get lost in the shuffle. All of a sudden they're not one of 50 but one of 275. You're a number and you're on your own. In a room with 28 strangers, that confidence is so necessary."* Finally, a middle school student added, *"I came into middle school really shy but teachers encouraged me to do things I thought I'd never do."*

Because of the need for schools to address adolescent issues, many participants praised middle schools for creating a safe family-like environment where students could approach teachers with non-academic problems. A middle school parent explained, "*some things as a parent our children don't tell us. It's wonderful that our children can come to school and feel comfortable talking to their teachers if they feel they can't talk to their parents. My daughter talks about her teachers as if they're her family away from home."*

Many ways of dealing with middle grades students' socio-emotional needs were mentioned in the focus groups. Among these were counseling groups for divorce, friendship and grief; peer mediation; advisory and mentoring groups; academic teams; multi-age grouping; tutoring; exploratory block rotation; the exploratory program; clubs/activities; and limited competitive athletics. A factor in the understanding of the delicate balance between academic and socio-emotional growth was attributed to a college course required of all teachers receiving middle grades certification--Nurturing the Needs of the Middle Grades Learner. Every focus group composed of teachers, administrators and students agreed that balancing academics and socio-emotional growth is crucial in the middle grades. According to the observers at one school, students "reported that the middle school program teaches them how to be responsible... to learn academics [as well as] lessons about life."

Some focus group respondents felt that before a student could concentrate on academics, their socio-emotional needs had to be met.

Teachers were unanimous in crediting common planning and team teaching with their success in being able to deal with both academics and socio-emotional growth. Some parents disagreed that socio-emotional growth is a valid middle grades concern. Parents frequently stated the opinion that schools should be mostly concerned with academics and asked educators to be careful when touching upon social issues. One parent stated, "*If schools are going to teach values, the parent needs a 'say so' in what those values are."*

A teacher, advocating for a balance between academic and socio-emotional growth, declared, "*In middle school there has to be a balance because if you go strictly with academics, you'll miss two-thirds of what's going on in their middle grades (student's) lives.*"

Conclusions about the Effect of Georgia's Middle School Program on Student Transition from Childhood to Adolescence. This section of the evaluation examined three ways that middle grades schools can assist children in the transition from childhood to adolescence. The first involves changing the teaching and grading practices that are used as students progress from grade six to grade eight.

Middle grades teacher survey responses clearly indicate that core academic teachers in all four clusters do indeed use different practices in the sixth and eighth grades. There is no evidence supporting the contention that any of the various middle grades implementation patterns fails, on average, to hold different expectations or use different techniques for children in these two grades. However, the extent to which these practices increase or decrease varies widely across all four clusters. Despite these changes, the data in Appendix C show a striking similarity in the teaching and grading practices of eighth grade teachers in all four clusters. This suggests that all four implementation groups tend to expose their students to very similar practices in their final year before high school.

Advisory and/or mentoring programs provide a second means of assisting children in the transition from childhood to adolescence. Evaluating the efficacy of advisory programs in Georgia is problematic at best. The program is so unevenly understood and implemented that it is difficult to even get educators to agree on a description of what it is. The largely anecdotal evidence that does exist suggests that the program may have some positive effects, but that a more well-developed advisory curriculum may be needed. Mentoring programs are generally seen as being of benefit, particularly to children with specific needs.

School environment for both teachers and students was shown to be related to ITBS gain scores. Teacher and student perceptions were also shown to be related to one another. When one group feels the environment is more positive, so does the other. However, only teachers' perception of the extent to whioch the school emphasizes accomplishment (rather that power) varies significantly across the clusters. In Cluster 2 schools, which have previously been shown to produce the lowest academic gains, this measure of school climate was significantly lower than it was in any of the remaining clusters.

The Effect of Georgia's Middle School Program on Student Preparation for High School Program/Course Selection

As discussed in previous sections of this report, most focus group participants were overwhelmingly positive about the middle school concept. The only consistent source of criticism about middle grades education came from high school teachers and administrators. Some were supportive of the middle school approach and results, but many were critical. Much of this conflict found its source in the clash between the underlying and vastly differing child development and pedagogical beliefs of the middle school and the high school approaches.

Data collected from the focus groups, the observations, and the surveys all make it clear that the issue is not whether middle grades teachers see preparing students for high school as an important concern. In fact, teachers and administrators at several middle grades schools reported that helping students successfully make the transition from elementary to high school is their primary goal. The issue is the extent to which the middle school concept does or does not aid in this process.

The conflict surrounding the extent to which students are prepared for high school led to clear disagreements between middle grades and high school participants in the focus groups. Two primary areas of concern were noted: academic preparation and socio-emotional preparation. (Other concerns about the middle school concept, including the extent to which its benefits justify its costs, will be addressed in the second year of this study.)

Academic Preparation. One of the most controversial issues for focus group participants was the question of whether middle schools appropriately prepare students for high school. High school administrators and teachers often criticized the middle school model. The common complaint was that "*students from middle schools aren't prepared to deal with the academic rigor of high school.*" Likewise, middle school administrators and teachers criticized the high school model by arguing that "*high schools ought to be more like middle schools offering teams and common planning in order to engage learners and deal with adolescent emotional issues.*"

Many high school participants felt that the child centered philosophies of middle grades schools resulted in a de-emphasis of academics and, as a result, weaker achievement. High school teachers and administrators felt that middle school academic instruction is weakened by the practice of middle grades teachers teaching subjects for which they are not certified. One middle grades teacher was even moved to say, "*I feel this job requires a degree in child psychology. At some point I want to be able to teach content too.*"

Analysis of the high school teacher survey responses suggests that the perceptions reflected in the focus group may paint middle grades schools with a brush that is far too broad. Ninth grade teachers were asked, among other things, to identify their primary teaching assignment. They were also asked how well students that come to their school are prepared to study each core subject area at the high school level. The responses were then disaggregated to explore how English/language arts teachers feel about their students' English/language arts preparation, how math teachers feel about students' math preparation, and so on. The results of this analysis are shown in Chart O.

Two conclusions are immediately apparent in Chart O. First, most ninth grade core academic teachers are far less than enthusiastic about their students' preparation for high school. When asked to respond to positive statements about student academic preparation, most responses were between "Disagree" and "Unsure." The second conclusion is that teachers in schools that receive their students from Cluster 4 schools - those that are most fully implementing the middle school concept - generally rate their students' preparation higher than do teachers receiving students from the other clusters. (The sole exception is in social studies, where students from Cluster 1 are given a slight edge.)

While the students from the highest implementing schools generally received the highest ratings in terms of academic preparation, students from the lowest implementation group, Cluster 1, were rated nearly as high as Cluster 4 students in all areas except English/language arts. In all areas, students from Cluster 2 and Cluster 3 schools received lower ratings. This lends support to the finding, presented earlier, that full implementation of the middle school concept is the most effective middle grades strategy being used in Georgia's public schools. However, partial implementation of the concept in a weak instructional model, and is poor practice.

When ninth grade teachers were asked how well middle grades schools in their district teach basic, essential skills and provide opportunities for mastery of more advanced skills (two of the state's purposes for middle grades education), Cluster 1 schools edged out Cluster 4 schools. While there was no statistically significant difference between any of the groups, the scores for Clusters 2 and 3 were sufficiently lower that the difference might nonetheless be meaningful (Chart P). This further supports the contention that ninth grade teachers see incomplete implementation of the middle school concept as an impediment to student learning.

Some high school teachers and administrators also felt that middle schools are not holding students accountable for their work. One high school principal said that middle schools were failing to teach students the importance of accepting consequences. *"Kids come in with the attitude that no matter what they do, schools aren't going to hold them back. Middle schools are not doing these kids a service by giving them so many chances to turn in work up to six weeks late. If there's no consequence for students who do not do their work, then other [higher-achieving] students will think that they don't have to finish their work either. In my high school we had forty-five percent of our ninth graders failing one or more classes."*

Some focus group participants, particularly parents and students, felt that homogeneous grouping of students resulted in holding back brighter students. As noted earlier, both focus group participants and survey respondents indicated that some schools have taken steps to address this by grouping students by ability for certain subjects (e.g., math and English/language arts) and by offering a gifted and talented program.

Some focus group participants said that using interdisciplinary units and the teaming concept helps students feel a sense of continuity within content areas which, in turn, helped to enhance their study skills. Teaming also seems to help convey concepts in different styles for different learners. A high school parent stated, "*My child in high school is very disorganized, he could have used the structure [provided by] middle school.*" "*They get one style in high school: lecture. It's all content driven,*" said a middle school principal. "*But different kids learn different*

ways. In middle school, teachers get down to finding out how each kid learns best and incorporate different styles into their teaching."

Socio-Emotional Preparation. Many high school teachers and administrators in the focus groups felt that students arrive at high school less independent, less responsible and less accountable as a result of the nurturing middle grades environment. In high school teachers' and administrators' language, "*Students are coddled*," and "*They baby their students*," along with "*Too cushiony.*"

Some middle grades teachers shared this view. One middle level teacher said,"*When middle grades students get to high school, they... can't handle the freedom. They don't have the self-discipline. They can't handle the independence and responsibility.*" "*Children can handle more independence than they're given. They should be challenged more,*" declared another. "*Middle grades teachers don't have high expectations. They don't stretch their students,*" said a third.

One of the most controversial issues for focus group participants was the question of whether middle schools help students mature to the point where they are ready for high school. High school administrators and teachers often criticized the middle school model on this point. The common complaint was that "*students from middle schools aren't prepared to deal with the academic rigor of high school.*" Likewise, middle school administrators and teachers criticized the high school model by arguing that "*high schools ought to be more like middle schools offering teams and common planning in order to engage learners and deal with adolescent emotional issues.*"

For one current high school student in the focus groups, there was no question about whether the middle school concept helps prepare students for the ninth grade. Speaking about his experience in a middle school, he said "*It gave me some confidence coming out of elementary school. You know, you're sort of that little kid and in middle school they just keep building you up, they're making you more of a person who is ready to go to high school, on to college and then on to real life. So it's just another stepping stone toward becoming a man or woman.*"

Chart Q presents ninth grade teachers' responses to another item on the survey. Teachers were asked the extent to which they agree that students leave their high school better disciplined than they were when they entered. Again, the difference between the groups is not statistically significant but the pattern is interesting. Teachers in schools that are primarily fed by Cluster 1 middle grades schools reported the greatest improvement in student behavior. Teachers with students primarily coming from Cluster 4 schools reported the least improvement. Whether students from high implementing middle schools arrive at the high school better disciplined and have less need for improvement, or are more intransigent, is unclear. In either event, ninth grade teachers' survey responses do not support the contention that implementation of the middle school concept leads to ninth graders bringing increased discipline problems to the high school.

The study also asked students who were in the ninth grade in Fall 1997 (the same students who answered the middle schools student survey as eighth graders in Spring 1997) how well they felt that their middle grades experience had prepared them for high school. There was no significant difference between the clusters.

Bridging the Gap Between Middle Grades and High School. Middle grades teachers and administrators who participated in the focus groups were fully aware of the problems their students face when they arrive in high school. To a large extent, middle schools start working with students in the sixth grade to prepare them for their high school years. Focus group participants gave several examples of this process. In sixth grade, teams of teachers tend to be smaller, usually two to three teachers for 60 to 90 students. Sixth grade exploratory classes are typically a "smorgasbord" of diverse opportunities to sample a wide variety of courses. In seventh grade, team size usually increases to 3 or 4 teachers working with a group of 90 to 120 students. Exploratory offerings are narrower and often lasted for an entire semester. Eighth grade is often taught by teams of 4 to 5 teachers. Opportunities to explore are further narrowed to courses of greatest interest to the student. In addition, freedom of movement around the campus is typically restricted by close supervision for sixth graders. This supervision is decreased in the seventh grade until in eighth grade when, in many cases, students are allowed a maximum amount of freedom.

Not all participants believed the problem lies in doing a better job of preparing eighth graders for high school life. Some felt that the middle grades approach is a better developmental and pedagogical model and that high schools should modify their programs by adopting middle grades principles. Some high schools are experimenting with these approaches, adding in freshman academies and other programs.

Many middle school administrators and teachers in the focus groups agreed that nurturing has a higher priority than academic rigor, particularly at the entry level of the middle grades program. "*We send little birds over to high school who haven't learned that they have to be independent. The high school approach is not to assure the child's success and happiness. They will not have a core team worrying about them and looking out for them. We need to do a better job of preparing the child to succeed in the high school environment,*" declared a middle grades teacher.

Several middle grades staff argued that academic accountability can be easily incorporated into the middle grades structure. For example, although there were no commonly held standards for student attendance, completing late work, or promotion from one grade to the next, some middle schools have adopted their own standard. A middle school principal commented, "*Our middle school has a remedial component for students who are in danger of failing 8th grade. When they show evidence that they're mature enough to do the work, they're allowed to go on to high school. If not, they're held back. Middle schools can make promotion contingent upon passing a remedial summer school.*" A middle school administrator agreed. "*We don't need restructuring, we need redefining of some expectations.*"

Many middle school teachers and administrators felt that it was inappropriate to expect that middle school students must conform to high school constructs while they are in the middle grades. "*People ask 'are you preparing kids for high school?' as if that's the end goal. There are so many other things to address. We're building the child, not just one portion. The skills we teach in middle school, they won't just use in high school,*" explained a middle grades teacher.

The middle school student survey findings do not support the notion that middle schools do not spend significantly less time emphasizing high school preparation than do junior high schools.

Responding to an item that asked whether their teachers talk with them about what high school will be like, the average response from students in Cluster 1 schools was 2.9 (2=sometimes true, 3=often true). The responses for Clusters 2, 3 and 4 were 2.7, 2.7, and 2.6, respectively. While the scores for Cluster 1 schools are higher than the scores for the other groups, the difference between groups is not statistically significant and is probably too slight to be meaningful.

Several middle school administrators and teachers were quick to defend themselves against comments that middle schools are not academically preparing students for the expectations associated with high schools. A middle grades administrator remarked, "*If middle schools provide high academic expectations, they can provide the warm fuzzies and the subject matter knowledge.... I'm afraid that we'll see a higher dropout rate if we don't have the warm fuzziness. The students are going through so many emotional stresses at that time that it's nice to have a team of teachers that understand each student and can suggest how to work with that student.*" Other teachers and principals explained that their middle schools treat their eighth graders more like high school students by allowing fewer extensions on assignments, having smaller teams, or as one eighth grader stated *"having two tests in two subjects on the same day."*

Many focus group participants explained that their schools have developed "transition teams" made up of high school and middle school teachers and administrators. These teams were developed to ease the transition from eighth grade to high school. Some schools have created teacher and student exchanges in which a high school teacher teaches an eighth grade class or eighth grade students attend high school classes. Other schools offer orientations during the spring of eighth grade in which high school students speak to middle school classes about what to expect regarding academics, extracurricular activities, and social interaction. Most transition teams are still in the process of *"determining what we needed to ease the transition"* as one middle school administrator said.

Observation teams also found several instances where transition programs are in place, or are being developed. In these schools, counselors play a pivotal role in helping students prepare to move to the high school. Observers also found some instances in which articulation programs have been developed and supported at the district level. However, in most cases these programs are the result of specific efforts between middle grades and high school teachers and administrators rather than system-wide initiatives.

Exploratory Programs. Exploratory courses play a unique role in bridging the gap between middle grades and high school programs. All the stakeholders viewed exploratory courses as a valuable and integral element of the middle grades curriculum. Strategies for implementing exploratory courses varied from school to school, based on factors such as experience (years as a middle school), local needs, and resources. Further, exploratory course programs change within schools from year to year as schools work to strengthen their programs.

While the curriculum varies from school to school and from year to year, the focus groups found that there is an overall pattern of exploratory course offerings in Georgia middle grades. Courses seem to fall into nine general categories, as shown in the box on page 62. In addition to this base exploratory curriculum, in many schools teachers are also encouraged to develop new courses in an area of personal interest or experience, such as gardening or astronomy.

Courses are typically six or nine weeks long (other than physical education which runs all year). One school had 12 week sessions. Most schools provide two 45 minute classes back to back, each class taught five days a week. Some schools have one and one-half hour classes with the two exploratory classes alternating days. Some schools offer certain classes only to specific grades (e.g., study skills only to 6th grade, career planning only to 8th grade). Other schools do not link courses to grades. By and large, exploratory class schedules are fixed for the year and students rotate through a predetermined set of courses without choice. Band and chorus appear to be the only electives that these students can actively choose.

All middle school focus group participants said that their schools offered exploratory classes for two periods out of a seven period day. They are scheduled during the core teams' common planning time, either in the early morning, late morning, or afternoon. Strategies differ as to what time of day each grade attends exploratory classes. Teachers generally believed that students, especially sixth graders, are most attentive at the beginning of the day and least attentive immediately after a physical education class or a "fun" class. As a result, many schools schedule sixth grade exploratory classes in the afternoon. Some schools, however, reserve the morning core classes for eighth graders who are in the "final push" for preparation for high school. Other schools rotate schedules.

Virtually without exception, respondents were comfortable with two out of the seven daily periods being devoted to exploratory classes. One period of seven was viewed to offer too little benefit. Teachers felt that the time devoted to exploratory classes does not detract from students' success in core subjects. Rather than seeing exploratory courses as "time taken away" from core academic classes, most teachers, administrators, and parents saw exploratory courses as integral to the middle grades education and "*consistent with the middle school goals of developing well rounded students*".

Despite the highly positive and near universal support for the exploratory program as a part of the middle school program, one exploratory teacher in a focus group felt that the exploratory curriculum is treated as secondary to the core academic curriculum. "*When extra time needs to be found in the day, such as for counseling, it's going to take place during our time. Back in the junior high school setting, exploratory classes were just as important as anything else. This is not so in the middle school. When resources are limited, they are pulled out of the exploratory program.*"

According to respondents, the goal of a middle school education, the expectations of institutions of higher education, and the desires of parents is for schools to develop well rounded citizens. Most agreed that a pure emphasis on academics would not be effective in producing well rounded students. Most also agreed that the exploratory curriculum is an appropriate and effective tool for broadening students experience by exposing them to a wide variety of content areas. Comments that were made include, *"Let's show them all that is possible before we force them to make pre-mature choices" [parent of middle grades student]* and *"I like lots of tastes. I'll focus later." [middle grades student]*

Teachers, parents, and administrators linked a number of benefits to the value of exposing students to a variety of areas in order to discover talents and assess likes and dislikes. They felt it will help prepare students for making wise choices for high school electives. A high school

principal talked of students without this experience "*bouncing around*" for a year before settling in. Also, when a student, especially one who is not succeeding academically, finds a talent or particular interest, several outcomes can ensue, including the ability of the teacher to leverage that talent and enthusiasm to help them succeed in core academic classes. "*I talk with exploratory teachers to find where a child is succeeding and try to use that as a hook to get the child interested in the academic subject. It's amazing what a turn-around you can get.*" Students, parents, and teachers all talked about potential burn-out from a pure academic curriculum. In students' language, they need a "brain break." Students said they are also more positive about school and the school day because of the more relaxed and varied nature of exploratory classes. It helps raise interest in school. It gives many students something to look forward to. "*It makes the day go by more easily,*" explained one middle grades student.

In the focus groups, a hotly debated issue was whether the purpose of exploratory classes was exposing students to "*just a taste*" of a topic, or for bona fide training. Respondents had varied opinions, for example, on the extent to which foreign language education in middle grades provides a true foundation for high school and whether a six or nine week class allows a student to learn enough about a subject. While many hoped for real "career" training, most agreed that exposure was the primary objective. In this regard, many felt that the exploratory curriculum was particularly important for teaching computer literacy and facility.

Teachers felt that strong positive self-esteem was important for learning and that exploratory courses can be an avenue for building self-esteem in students who are not academically successful. They also expressed the importance of familiarizing students with the arts as early as possible in life.

Many participants felt that exploratory courses help students make wise choices in electives when they get to high school. They also noted that exploratories served as a foundation for high school learning in certain courses such as foreign languages and band. Others claimed that exploratory courses *"helped prepare middle school students for life in high school"* because the exploratory course structure, where students move to different locations for classes, parallels the high school structure.

Students' opinions on the value of the exploratory program was somewhat less enthusiastic than that expressed by teachers and administrators. Students were asked whether it is true that exploratory classes are of value to them. The average response for students in Cluster 1 schools was 2.9, where 2 = Sometimes True and 3 = Often True. The average response for students in both Cluster 2 and Cluster 3 schools was 2.7; in Cluster 4 schools it was 2.6. These differences were not statistically significant and probably are not meaningful.

At the item level, there is an interesting pattern in the student responses concerning exploratory programs. While there are no significant or meaningful differences between clusters on any of the items, students say it is "Often True" that they learn a lot in their exploratory classes, and that these classes will help them decide what classes to take in high school. However, they report that it is only "Sometimes True" that the things they learn in exploratory classes help them understand what is taught in their other classes.

Conclusions about the Effect of Georgia's Middle School Program on Student Preparation for High School Program/Course Selection. This section of the evaluation looks at the relative effectiveness of various levels of middle school implementation on how well students are prepared to move on to high school. Two areas that were examined were academic preparation and socio-emotional preparation.

Based on the perceptions of ninth grade core academic teachers, there is no evidence that implementation of the middle school concept has an adverse affect on students' academic preparation, or that fully implementing middle schools do less well at teaching students the basic or advanced academic skills that they will need in the ninth grade. There is, however, evidence that full implementation and no implementation of the middle school concept are the two most effective means of educating middle grades children.

While they are difficult to interpret, data on students' socio-emotional development may indicate that there is no advantage to not implementing the middle school concept and that, in terms of student behavior at the high school, the middle school may produce students who are more fully prepared to move on to the high school.

Despite the lack of empirical evidence that the middle school concept impedes or misdirects student development, negative stereotyping of middle schools as a whole has led teachers and administrators at many of those schools to develop efforts to more successfully bridge the middle grades-high school gap.

Exploratory programs were found to be extremely varied in both instructional format and content. All stakeholders involved in this study felt that exploratory courses are an integral part of the middle grades curriculum, although for vastly different reasons. Adults saw these courses as providing an opportunity to reduced the dropout rate, reduce discipline problems, improve students' self-esteem, alleviate of stress for students, improve preparation for high school, increase the chance of identifying hidden talents, and give more students a chance to succeed. Students, on the other hand, were more likely to see these courses as a "brain break."

Part Three -
First Year Conclusions and Preliminary Recommendations

During the discussion groups and other conversations that were held in Fall 1996 to help focus this study, participants made a wide range of claims about the middle school concept. Some stakeholders strongly advocated in favor of the concept, contending that the approach is so successful that it should be the model for all K-12 education. Others argued that the middle school concept is ruining middle grades education, leaving children ill-prepared for either high school or the "real world." Perhaps not surprisingly, this study does not support either of these extreme positions.

Conclusions. This evaluation found that, in the sample used in this study, about a quarter of middle grades schools (23%) are substantially implementing the educational structures and instructional practices that practitioners across the state said should constitute the middle grades program. An equal number have made a good faith effort, and their implementation of the concept is above the average in Georgia. Another 16% have either decided to not implement the concept or are essentially implementing it in name only.

The remaining 38% of the middle grades schools in the study have only partially implemented the middle school concept. These schools seem to be stuck somewhere between the junior high school and the middle school concepts, trying to hold onto the practices of the former while operating, at least nominally, under the structure dictated by the Middle School Incentive Grant. At these schools, student gains - both academic and socio-emotional - typically are the lowest. This strongly suggests that whatever problems this state has with its middle grades educational program, the problem is not with the middle school concept. The problem is how the middle school concept is being put into practice.

Several interesting direct associations between the middle school concept and student achievement were found within the data that were collected. Some of these relationships speak to the importance of teacher commitment to the work routines they follow. For example, at schools where teachers more fully support the middle school concept, student gains in both reading and math are significantly higher. Also at schools where teachers effectively work together in interdisciplinary teams (a key element of the middle school concept), and at schools where there is greater support for community involvement in school governance (another key middle school element), student gains in both reading and math are significantly higher.

This study also found evidence of more subtle effects of the middle school climate on student gains. At schools where the middle school concept is more fully implemented, teachers report that the school culture is more likely to value teachers working together toward common goals (accomplishment) than competing with one another (power). At schools where there is an accomplishment-oriented culture, student believe that they have more positive relationships with their teachers, and believe that instruction is more effective. Also at these schools, student gains in both reading and math are significantly higher.

In no instances were low- or non-implementing schools found to be superior to schools that are fully implementing the middle school concept. A key argument against the middle school concept is that it fails to adequately prepare students for the rigors of high school. There is no statistically significant difference in the degree to which ninth grade core academic teachers report that students are academically prepared to enter the ninth grade, regardless of the extent to which the middle school concept was implemented at their students' middle grades school.

Preliminary Recommendations. The purpose of this first phase of the middle grades evaluation was to determine both how the middle grades program is being implemented statewide and the effect of that implementation on student achievement. Developing recommendations for program improvement is intended to be a part of the second year of the study. However, based on the data collected during Phase I (including teacher and student surveys at 81 middle grades and their receiving high schools; 44 focus groups involving middle grades and high school students, parents, teachers, and administrators, and other members of the school community; and on-site observations at 47 middle grades schools), it seems reasonable to make several *preliminary* recommendations at this time. These recommendations are listed below. Because these preliminary recommendations are based solely on trends that appear to be emerging in the data collected so far, their fiscal implications have not been examined.

- *Staff development:* Given the evidence that student achievement diminishes when middle school implementation is weak, efforts should be made to provide appropriate staff development in schools that are receiving the Middle School Incentive Grant.
- *Incentive Grant Funding:* The Middle School Incentive Grant requirements should be examined to determine what changes might best encourage full implementation of the middle school concept at schools choosing to adopt/continue this philosophy.[1]
- *Core academic block:* The length of the core academic block, and the teaching practices used during that time, should be explored to assure that instructional practices (a) fully meet student needs, and (b) take full advantage of the instructional time that is available.
- *Curriculum:* The middle grades curriculum should be reconsidered to assure that instruction conforms to the revised Quality Core Curriculum, is appropriately rigorous, includes remedial instruction as needed, and provides adequate types and numbers of exploratory courses.
- *Student choice:* Schools should explore allowing students to select exploratory courses based in their interest rather than being assigned to courses according to a fixed rotation.
- *Quality of instruction:* Efforts should be made to explore ways to minimize the number of teachers who teach out-of-field in both core and exploratory content areas.
- *Reporting grades:* The benefits and disadvantages of moving to a pass-fail grading system in some or all courses should be explored.
- *Linkage to high school:* Efforts to improve the linkage between middle school core and exploratory courses and high school programs should be examined.
- *Linkage to academics:* Efforts to improve the linkage between core and exploratory courses at the middle school also should be explored.
- *Linkage to elementary schools:* Means of improving the transition from elementary school to the middle grades should be considered.
- *Purpose of foreign language exploratories:* The purpose of these courses - whether they seek to teach a language or teach about a culture - should be reviewed, so that instructional practices may brought into line with the decision.

The cost-effectiveness component of this evaluation, which is also scheduled to take place in the second year, will address other areas of concern. This study has also suggested the need for further research in two additional areas: the academic preparation that is provided in the upper elementary grades, and the impact of freshman academies and other innovations on easing the middle grades - high school transition. It is recommended that DOE leadership consider the feasibility of conducting such studies as a part of the Department's on-going efforts to simultaneously support and improve public education in Georgia.

---

[1] This evaluation was not designed to assess the extent to which schools that receive MSIG funding are complying with the MSIG regulations. However, some information on that issue was inevitably collected during this study. Those findings will be presented in a separate publication in Fall 1998

Annotated References

Frary, R. B., Cross, L. H., and Weber, L. J. (April 1992). Testing and grading practices and opinions in the nineties: 1890s or 1990s? San Francisco: Paper presented at the annual meeting of the National Council on Measurement in Education. *GDOE thanks Dr. Frary for granting permission to use several items from his survey in the assessment practices portion of the instruments developed for this study.*

Kellough, R. D. and Kellough, N. G. (1996). Middle school teaching: A guide to methods and resources, 2nd ed. Englewood Cliffs, NJ: Prentice-Hall. *GDOE thanks the Kelloughs and their publisher, Prentice-Hall, for allowing the use of several items in the classroom practices section of the middle grades teacher survey.*

Midgley, C., Maehr, M., Hicks, L., Roeser, R., Urdan, T., Anderman, E., Kaplan, A., Arunkumar, R., and Middleton, M. (1997). Patterns of Adaptive Learning Survey. Ann Arbor: University of Michigan. *This survey provided many of the items in the middle grades teacher survey that dealt with patterns of instruction. These items were used by permission of the first author. GDOE thanks both Dr. Midgely and Rachel Buck Collopy for their help in the early phases of this study.*

National Middle School Association. (1995). This we believe. Columbus, OH: Author. *This publication outlines NMSA's prescription for creating "developmentally responsive" middle level schools. It is available from: National Middle School Association, 2600 Corporate Exchange Drive, Suite 370, Columbus, Ohio 43231.*

Rothermel, J. C. and Vogel, F. X. (April 1995). Restructuring and its effects on at-risk student attitudes in middle school. San Francisco: Paper presented at the annual meeting of the American Education Research Association. *GDOE thanks Ms. Rothermel for granting permission to use many of the items found in the student surveys.*

Appendix A - Methodology

This evaluation involved a number of stakeholders from across Georgia, and used a fairly complex data collection and analysis routines. The following pages explain how the study was designed, conducted, and reported.

Determining What Middle Grades Students Experience

The principal goal of the first year of the study was to determine how the many ways and degrees to which the middle school concept is being implemented by Georgia's middle grades schools affects student academic achievement.

The first task in achieving this goal was to determine exactly what types of educational experiences Georgia's students have as they move through grades six, seven and eight (the grades covered by the Middle School Incentive Grant), and categorize schools based on the types of experiences that they provide. The objective of this part of the study was to create groups of schools that could be compared to one another. Only with this information in hand would it be possible to meaningfully compare how student learning is affected by differing means and degrees of implementation of the middle school concept.

The first step in defining these groups was determining what criteria should be used to evaluate middle grades programming statewide. In October and November 1996, Georgia Department of Education (GDOE) staff conducted four discussion groups at various locations across the state. Through these meetings, GDOE staff was able to hear 99 middle grades and high school teachers and administrators give their opinions on what criteria should be evaluated and how they should be measured. In addition, some 1,800 educators statewide submitted written responses indicating their opinions about appropriate indicators and measures. The discussion group and written responses were the single most important factor in determining the types of items that were examined in the first year of the evaluation.

The design of the study also benefited from input from a number of education and education policy groups statewide. These included Georgia's School Improvement Panel; the Georgia Middle School Association; the Georgia Association of Middle School Principals; the Georgia chapter of the Professors of Middle Level Education; the Georgia State Superintendents' Association; and middle grades and research faculty at Georgia Southern University, the University of Georgia, and Valdosta State University.

Most of the suggestions made by one or more of these groups were incorporated into the design. However, one suggestion that was strongly advocated by faculty at several universities was not adopted. Several professors were concerned that the study did not begin by measuring the degree to which the schools involved in the study were implementing the middle school

concept as it has been articulated by the National Middle School Association, the Carnegie Council on Adolescent Development, or some other entity. This approach, while both appropriate and useful in some circumstances, would not address the question asked by the State Superintendent of Schools and other state policy makers and education leaders: How do *the things that are being done in Georgia*, and not various organizations' statements of philosophy, affect Georgia's students? To address this question, it seemed far preferable to base the study on our state's educators' opinions of what constitute appropriate indicators and measures of student learning.

Selecting the Sample

While the indicators and measures were being identified, GDOE staff also began identifying a stratified random sample of middle grades schools that would be invited to participate in the evaluation. Throughout the design of the study, every effort was made to involve as many schools as the available resources would allow. With that in mind, it was decided that 25% of the middle grades schools in the state would be invited to participate in the survey process, and that a total of 44 focus groups would be held. Funding to cover the cost of forty-seven observations was also obtained.

To ensure that each school and each area of Georgia had an equal opportunity for representation in the survey aspect of the evaluation, the state was divided into five geographic regions. Schools were randomly selected from each region[2]. The school districts in each region are identified in Table A-1.

Across Georgia, 392 schools taught students in grades 6-8 or 7-8 in FY96. The sampling process identified 93 of these schools. One of these schools was disbanded when its district reorganized in FY97, thus reducing to 92 the number of schools that were asked to participate in the survey process.

The use of the phrases "invited" and "asked to participate" is a purposeful choice of words, and one that applies to all aspects of this study. No person, school or school system was compelled to participate in any part of the study. Some schools and individuals chose to use this option. For example, the principals at three schools felt that the timing of the surveys would place an undue hardship on their students and/or teachers, and declined to participate in that aspect of the study. This reduced the number of participating schools to 89. These schools, the county in which they are located, and the grades taught in them, are listed in Table A-2.

---

[2]Many other stratification techniques, such as selecting districts by federal congressional district, tend to under represent districts in rural areas of the state. A statewide random sample, on the other hand, might not be evenly distributed and could therefore fail to capture the full diversity of the state.

Table A-1: School Districts by Geographic Region

Northern		Eastern		Southeastern	
Banks	Stephens	Baldwin	Lincoln	Appling	Long
Bartow	Towns	Barrow	Madison	Atkinson	Liberty
Catoosa	Union	Bullock	McDuffie	Bacon	Lowndes
Chattooga	Walker	Burke	Morgan	Ben Hill	McIntos
Cherokee	White	Butts	Newton	Berrien	Montgo
Chattooga	Whitfield	Candler	Oconee	Bleckley	Pierce
Cherokee	City Systems:	Clarke	Oglethorpe	Brantley	Pulaski
Dade	Bremen	Columbia	Putnam	Bryan	Tattnal
Dawson	Calhoun	Effingham	Richmond	Camden	Telfair
Fannin	Cartersville	Elbert	Rockdale	Charlton	Toombs
Floyd	Chickamauga	Emanuel	Screven	Chatham	Treutlen
Forsyth	Dalton	Franklin	Taliaferro	Clinch	Ware
Gilmer	Gainesville	Glascock	Twiggs	Coffee	Wayne
Gordon	Rome	Greene	Walton	Cook	Wheeler
Habersham	Trion	Hancock	Warren	Dodge	Wilcox
Hall		Hart	Washington	Echols	City Sys
Haralson		Henry	Wilkinson	Evans	Dublin
Lumpkin		Jackson	City Systems:	Glynn	Valdosta
Murray		Jasper	Commerce	Houston	Vidalia
Paulding		Jefferson	Jefferson	Irwin	
Pickens		Jenkins	Social Circle	Jeff Davis	
Polk		Johnson		Lanier	
Rabun		Jones		Laurens	

BEST COPY AVAILABLE

	Southwestern			Metro
	Baker	Macon	Webster	Clayton
	Bibb	Marion	Worth	Cobb
s	Brooks	Meriweather	City Systems:	DeKalb
h	Calhoun	Miller	Carrollton	Fulton
mery	Carroll	Mitchell	Pelham	Gwinnett
	Chattahoochee	Monroe	Thomasville	City Systems:
	Clay	Muscogee		Atlanta
	Crawford	Peach		Buford
	Crisp	Pike		Decatur
s	Colquitt	Quitman		Marietta
n	Coweta	Randolph		
	Decatur	Schley		
	Dooley	Seminole		
r	Dougherty	Stewart		
	Douglas	Sumter		
stems:	Early	Talbot		
	Fayette	Taylor		
a	Grady	Terrell		
	Grif.-Spalding	Thomas		
	Harris	Thom.-Upson		
	Heard	Tift		
	Lamar	Troup		
	Lee	Turner		

The three schools that chose to not participate were located in the Northern, Southeastern, and Southwestern zones of the state. All three were 6-8 middle schools. Beyond that, though, they appear to be very different schools. One has received Middle School Incentive Grant funding continuously since the 1989-90 school year. Another received funding in the years 1987-1989, but has not been a part of the program since that time. The third school received MSIG for the first time in 1996-97.

Because 6-8 schools were the most common configuration in the sample, it did not appear that losing these sites would undermine the integrity of the sample. Further, the differences in these schools' past experience with middle school implementation suggest that they do not represent any particular subset of entities within the sample. Consequently, it was determined that their loss did not weaken the study's generalizability within Georgia's public middle grades schools.

Involving Stakeholders

The primary stakeholders of middle grades education were defined as middle grades and high school students, parents, teachers, and administrators, and other members of the community not falling into one of the previously named categories. In addition to the involvement of middle grades and high school teachers and administrators in focusing the evaluation, members of each stakeholder group were also represented in the data collection process. In other words, this evaluation sought to cast a very wide net in an effort to include as many groups of people as possible.

Five of the nine stakeholder groups participated in the survey process. All nine groups were represented in the focus groups. Table A-3 shows the specific number of participants, by group, that were involved in each aspect of the data collection.

Collecting the Data

The findings of this study are based on implementation data collected from nine groups of people with knowledge of and/or an interest in the workings of the middle grades program(s) in their communities. These stakeholder groups include middle grades and high school teachers and administrators, middle grades and high school students and their parents, and other members of the community.

Table A-2: Schools Agreeing to Participate in the Survey Process

Boddie Middle	Baldwin Co.	6-8	South Hall Middle	Hall Co.	6-8
Brantley Co. Middle	Brantley Co.	6-8	Harris Co. - Carver Mid.	Harris Co.	6-8
Brooks Co. Middle	Brooks Co.	6-8	Centralhatchee Elem	Heard Co.	K-8
Marvin Pittman Elem	Bulloch Co.	K-8	Heard Co. Comp High	Heard Co.	6-12
Metter Middle	Candler Co.	6-8	Eagle's Landing Middle	Henry Co.	6-8
Hubert Middle	Chatham Co.	6-8	Stockbridge Middle	Henry Co.	6-8
Shuman Middle	Chatham Co.	6-8	Irwin Co. Middle	Irwin Co.	6-8
Chattahoochee Co Ed Cr	Chattahoochee	6-8	Wrens Middle	Jefferson Co	6-8
Pennville Elementary	Chattooga	K-8	W. Laurens Middle	Laurens Co.	6-8
Adamson Middle	Clayton Co.	6-8	Lee Co. Middle	Lee Co.	7-8
Babb Middle	Clayton Co.	6-8	Miller Co. Middle/High	Miller Co.	6-12
North Clayton Middle	Clayton Co.	6-8	Fort Middle	Muscogee Co.	7-8
Morrow Middle	Clayton Co.	6-8	Rothschild Middle	Muscogee Co.	7-8
McClesky Middle	Cobb Co.	6-8	Clements Middle	Newton Co.	6-8
Dodgen Middle	Cobb Co.	6-8	Fort Valley Middle	Peach Co.	6-8
Pine Mountain Middle	Cobb Co.	6-8	Elm Street Middle	Polk Co.	6-8
Nash Middle	Cobb Co.	6-8	Putnam Co. Middle	Putnam Co.	6-8
Simpson Middle	Cobb Co.	6-8	Spirit Creek Middle	Richmond Co.	6-8
Garrett Middle	Cobb Co.	6-8	Tutt Middle	Richmond Co.	6-8
Williams Middle	Colquitt Co.	6-8	Seminole Co. Mid/High	Seminole Co.	6-8
Evans Middle	Columbia Co.	6-8	Flynt Middle	Griffin-Spalding	6-8
Cook Co. Middle	Cook Co.	6-8	Stewart-Quitman Middle	Stewart Co.	6-8
Northgate Middle	Coweta Co.	6-8	Collins Elementary	Tattnall Co.	P-8
Arnall Middle School	Coweta Co.	6-8	Central Middle	Thomas Co.	6-8
Crawford Co. Middle	Crawford Co.	6-8	Toombs Co. Middle	Toombs Co.	6-8
Dade Co. Middle	Dade Co.	6-8	Gardner Newman Mid	Troup Co.	6-8
Dooly Co. Middle	Dooly Co.	6-8	Callaway Middle	Troup Co.	6-8
Merry Acres Middle	Dougherty Co.	6-8	Twiggs Co. Comp Mid/Hi	Twiggs Co.	6-12

Adrian Sch of Perf Arts	Emanuel Co.	PK-8	Woody Gap High/Elem	Union Co.	K-12
Fannin Co. Middle	Fannin Co.	6-8	Rossville Middle	Walker Co.	6-8
Booth Middle	Fayette Co.	6-8	Loganville Middle	Walton Co.	6-8
Fayette Middle	Fayette Co.	6-8	Ware Magnet	Ware Co.	K-12
Pepperell Middle	Floyd Co.	6-8	Waycross Middle	Ware Co.	6-8
Crabapple Middle	Fulton Co.	6-8	Puckett Middle	Wayne Co.	6-8
Glascock Co. Consol.	Glascock Co.	K-12	Wilcox Co. Middle	Wilcox Co.	6-8
Jane Macon Middle	Glynn Co.	6-8	Long Middle	Atlanta City	6-8
Ashworth Middle	Gordon Co.	6-8	Bunche Middle	Atlanta City	6-8
Green-Taliaferro Middle	Greene Co.	7-8	Marshall Middle	Atlanta City	6-8
Trickum Middle	Gwinnett Co.	6-8	Young Middle	Atlanta City	6-8
Lanier Middle	Gwinnett Co.	6-8	Sutton Middle	Atlanta City	6-8
Snellville Middle	Gwinnett Co.	6-8	Kennedy Middle	Atlanta City	6-8
Creekland Middle	Gwinnett Co.	6-8	Carrollton Jr. High	Carrollton Ci	6-8
N Habersham Middle	Habersham Co	6-8	Gordon Lee Middle/High	Chickamauga	6-12
West Hall Middle	Hall Co.	6-8			

The data collection aspect of the study was designed to use one or more surveys to collect data on how, and to what extent, the schools in the sample are implementing the middle school philosophy and criteria. Table 4 indicates how data on each of the seven characteristics, or scales, were collected.

Data were collected from each stakeholder group in three ways: surveys, focus groups, and observations. To make the study as comprehensive as possible within a short time frame, and to minimize any opportunities for researcher biases to influence the study, each of these three elements of the study was conducted by a different group of researchers. The methodological basis of each of these methodologies is briefly discussed in the following pages.

Table A-3: Stakeholder Participation in the Data Collection*

	MG Students	HS Students	MG Parents	HS Parents	MS Teachers	HS Teachers	MS Admin.	HS Admin.	Other
Surveys	46,570	34,693	0	0	2,481	486	70	0	0
Focus Groups	33	18	50	8	146	14	51	14	4
Total	46,603	34,711	50	8	2,627	500	121	14	4

* NOTE: This table does not reflect the many students, teachers, and administrators who were involved in the on-site observations. Observers conducted a total of 275 interviews and 234 observations. Many interviews, and all observations, involved multiple stakeholders.

Surveys. The surveys were developed, administered, and analyzed by Research, Evaluation and Testing (RET) Division staff at the Georgia Department of Education. Some survey items were taken from existing instruments, with the permission of the author. These existing instruments are listed in the References section of this paper.

The full battery of surveys that were administered during this first year of the study included middle grades and high school student and teacher surveys, and middle grades principal surveys. The middle grades teacher survey was used as the "master" instrument; virtually all constructs that were measured during the study's first year were contained in this survey. The initial drafts of the middle grades teacher and student surveys were reviewed by research faculty at Valdosta State University, and were modified in response to suggestions concerning both content and wording.

In March 1997, the revised drafts of the teacher and student surveys were field tested at three Georgia middle grades schools: East Coffee Middle School in Coffee County, Coosa Middle School in Floyd County, and Arnold Middle School in Muscogee County. These field test sites were not randomly selected. Rather, they were purposefully chosen because administrators at these schools are strongly committed to implementing the middle school concept. The belief underlying this choice was that teachers and administrators at these schools would be willing and able to comment on whether the surveys asked the right questions to comprehensively evaluate the effects of implementing the middle school concept.

Once the field tests had been completed, RET staff visited each test site and met with the teachers, by team, to get face-to-face feedback on their opinions about the instruments. Numerous suggestions were received during these three days of meetings, and many ideas were incorporated into the surveys. Exploratory factor analysis (using a varimax rotation), and calculation and analysis of the reliability of the resulting scales using Cronbach's alpha, were used identify items to be deleted from the surveys.

BEST COPY AVAILABLE

The full administration of the surveys occurred in early May 1997, and analyses were conducted during the second half of the year. As in the field test, the sub-scales and scales were identified using exploratory factor analysis, and reliabilities were determined using Cronbach's alpha.

Focus Groups. The focus groups were conducted by an independent, private research group, RMC Educational Research of Denver, Colorado. RMC was awarded this contract based on its response to a Request for Proposals that was release in February 1997. The focus groups were conducted statewide in late April and early May 1997.

Focus groups were used for two purposes: to solicit opinions that could be triangulated with survey and observation data, and to help define issues that the informal discussion groups indicated were not clearly understood across the state. Advisory programs are the best example of this phenomenon. Because the instructional strategies and desired products of advisory programs varied so widely, it seemed that using surveys to probe this topic would either (a) require very many question, or (2) risk having serious problems with content validity. The diversity of opinion represented in the focus groups, and discussed in Part Two of this report, suggest that using the focus groups in this way was quite appropriate.

Observations. While there was no reason to doubt the accuracy of the survey and focus group data, both of these methodologies relied on data that were self-reported by program stakeholders. The observation data provided the third leg of the triangulated design. The data were collected by teams of researchers from 11 state universities. This effort was coordinated by the University of Georgia.

Analyzing the Data

Calculating ITBS Gain Scores. Using state records, Spring 1997 8th grade school average ITBS standard scores for reading and math were obtained for the schools in the sample. Spring 1994 5th grade ITBS reading and math standard scores for the elementary schools that provided at least 20% of the students in the sample schools were also obtained from state records. Each sample school's average gain score was calculated by subtracting the average of the 5th grade feeder school scores from the 8th grade score. This produced a measure of how much, on average at the school level, 8th grade students' scores rose between the end of their 5th grade and 8th grade years. These school level average gain scores were used in all computations involving student academic gains.

Creating the Implementation Clusters. The implementation clusters were created using data from the middle grades teacher survey. As noted earlier, the 199 items in the survey were developed in response to verbal and written input from over 1,800 middle grades educators throughout Georgia. Initial factor analysis of the survey responses, using a varimax rotation,

identified 29 factors, or sub-scales. A second-order factor analysis of these sub-scales, again using a varimax rotation, identified 7 scales. The scales and sub-scales are listed in Table A-4.

Once the scales and sub-scales had been identified, the next step was to create a school-level score for each of these dimensions. Many of the items included in the survey were taken from existing scales developed by other researchers. Some of these used a four point metric; others used a five point metric. To compensate, all scores were converted to a 20 point metric. This 20-point metric was used to calculate the school-level mean scores.

Descriptive statistics, including standard deviation, were calculated for each of the scales. Based on these findings, seven scale scores (one for each scale) were created for each school. If a school's scale score was two or more standard deviations below the sample mean, the scale score was -2. Schools with scale scores one standard deviation below the sample mean received a scale score of -1. The same process was used for schools with scale scores one and two standard deviations above the mean. Standard deviations were used as cut points, both here and later in this process, to assure that the lowest ranked and highest ranked schools were, in fact, engaged in particularly low or high levels of implementation of the identified elements of the middle school concept.

Next, the scale scores for each school were summed to create an overall school-level implementation score. The maximum possible range for these scores was 28 points, from -14 to +14. (For example, an implementation score of -14 would result from all seven of a school's scale scores being -2.) The actual range of implementation scores was 19 points, from -9 to +10.

Descriptive statistics, including standard deviation, was then calculated for the 79 school-level implementation scores. Schools were assigned to Cluster 1 (lowest implementation) if their overall implementation score was 2 or more standard deviations below the average school level implementation score. Cluster 2 schools were defined as those with an implementation score 1 standard deviation below the mean. Cluster 3 and Cluster 4 rankings were assigned to schools with implementation scores that were, respectively, 1 and 2 standard deviations above the mean. This process identified 13 schools in Cluster 1, 30 schools in Cluster 2, and 18 schools in each of Clusters 3 and 4.

In addition to using basic descriptive statistics and checking for curvilinear relationships, three inferential statistical processes were used to understand the data. These processes were Pearson product-moment correlations (both bivariate and partialled to control for the effects of free and reduced price lunch, a proxy for socio-economic status), one-way analysis of variance (primarily using cluster as the independent or criterion variable), and linear regression. It is

Table A-4: Scales and Sub-scales Identified from Middle Grades Teacher Survey Responses

Scale:	Unity
Subscales:	School supports Georgia's middle grades purposes
	School supports community involvement in decision making
	Intra-team cooperation
	Team commitment
	Effective use of team planning time
	Instructional management
	Teachers support middle school philosophy
	Teachers support middle grades legislation
	Teachers believe middle grades students have unique needs
	Teachers believe exploratory courses are an important part of the school curriculum
	The school culture supports accomplishment*
Scale:	Teamwork
Subscales:	Team involvement in school governance
	Cooperative focus
	Assigning written work
	Using other persons as resources
	Assigning small group work
Scale:	Student Growth
Subscale:	Intrinsic Competition
	Extrinsic Competition
	Competitive Focus
Scale:	Positive Work Environment
Subscale:	Teachers follow uniform policies regarding students
	The school culture supports accomplishment*
	The school culture does not support power
Scale:	Assessment Practices (no subscales)
Scale:	Higher Order Thinking
Subscales:	Higher order thinking skills
	Metacognitive skills
Scale:	Knowledge.

* *Included in two scales*

recognized that while these procedures help identify some possible causes of the relationships that are described, they do not necessarily rule out alternate explanations.

Quantitative Data Analysis. The bulk of the analyses included in this report are bivatiate and partial correlations, and one-way Analysis of Variance (ANOVA). The bivariate correlations were conducted to determine whether and to what extent different dependent and independent variables presented in this study are associated with one another. Given the pervasive effects of socio-economic status (discussed beginning on page 14), efforts were made to control for this factor in the correlations. This was done by running all correlations twice: once as bivariate analyses, and once partialling the influence of SES out of all of the variables in the correlations. Semi-partial correlations, which control for the influence of a factor in only some of the variables being correlated, did not make conceptual sense for this study and were not used.

The ANOVA procedure was used to determine whether there are statistically significant differences between clusters or other groupings. In cases where the groups displayed equal variance, the Scheffe post-hoc test was used to determine which groups differed from one another. In cases where equal variance could not be assumed, Tamhane's post-hoc procedure was used. Both Scheffe and Tuhane were chosen because of their conservative nature; both of these tests favor rejection of a significant difference over identification of a non-significant difference. This helps assure that claims of statistical significance made in this report are not incorrect.

Determinations of statistical significance are also supported by the use of school level data in this report. Almost all of the computations reported herein are based on between 75 and 85 cases. Using this smaller number of cases makes it less likely to find a significant difference than does using the responses of, say, 2600 middle grades teachers or 46,600 middle grades students.

In the body of the report, it is noted that statistical significance is not necessarily synonymous with conceptual importance. Policy makers and other readers may well look at a significant difference and conclude that it is too small to be meaningful. This most certainly is an appropriate use of the data.

Qualitative Data Analysis. The contractors who conducted the focus groups and the observations were each responsible for analyzing and reporting their data. DOE staff then folded these findings together with the survey data. In both cases, contractors began their work looking for data in certain specified areas. Also in both cases, data were initially sorted to conform to these parameter; that is, to answer the questions that they were hired to answer. Within these previously specified topics, both contractors also coded and sorted the data into sub-groupings that made conceptual sense.

Table A-5: Schools Participating in Observations

Appling County: Appling County Middle School
Atlanta City: Inman Middle School; Bunche Middle School; Usher Middle School
Bremen City: Sewell Middle School
Buford City: Buford Middle School
Carroll County: Central Middle School
Cartersville City: Cartersville Middle School
Chatham County: Mercer Middle School; Shuman Middle School
Clarke County: W. R. Coile Middle School
Cobb County: Lost Mountain Middle School; Pine Mountain Middle School; Hightower Trail Middle School
Coffee County: East Coffee Middle School
Colquitt County: Williams Middle School
Columbia County: Lakside Middle School; Harlem Middle School
Commerce City: Commerce Middle School
Coweta County: East Coweta Middle School
Dalton City: Dalton Junior High School
Decatur County: Hutto Middle School
DeKalb County: Stephenson Middle School; Stone Mountain Middle School
Effingham County: South Effingham Middle School
Fayette County: Flat Rock Middle School; Whitewater Middle School; Fayette Middle School
Floyd County: Coosa Middle School
Glynn County: Risley Middle School
Gordon County: Sonoraville Middle School
Gwinnett County: Summerour Middle School; Shiloh Middle School
Houston County: Houston Middle School; Feagin Mill Middle School
Marietta City: Marietta Middle School
McIntosh County: McIntosh County Academy Middle School
Oconee County: Oconee Middle School
Putnam County: Putnam County Middle School
Richmond County: Davidson Fine Arts School
Stephens County: Stephens Co. Middle School
Sumter County: Staley Middle School
Troup County: Callaway Middle School
Ware County: Waycross Middle School
Washington County: T. J. Elder Middle School
White County: White County Middle School
Whitfield County: Valley Point Middle School

Table A-6: Focus Group Sites

Congressional District	Focus Group Location
1st	First District RESA, Statesboro
2nd	Costal Plains RESA, Valdosta
3rd	West Georgia RESA, Grantville
4th	DeKalb Co. Public Schools, DeKalb County
5th	Inman Middle School, Atlanta
6th	Crabapple Middle School, Roswell
7th	Coosa Middle School, Rome
8th	Okefenokee RESA, Waycross
9th	Gilmer Middle School, Ellijay
10th	Central Savannah River Area RESA, Dearing
11th	Northeast Georgia RESA, Winterville

Appendix B-
Correlations of Gain Scores and Independent Variables, With and Without Controlling for SES

Note that a non-significant finding does not mean that the independent variable is not an important factor in middle grades education. It simply means that, in this study, the variable was not associated with academic gains as measured by the Iowa Tests of Basic Skills.

** p <=.01; * p<=.05; NS= not significant

	ITBS Reading Gain - Not Partialled	ITBS Math Gain- Not Partialled	ITBS Reading Gain- Partial Correlation	ITBS Math Gain- Partial Correlation
Scale : Unity	.36**	.37**	NS	NS
School supports OCGA middle grades purposes	.49**	.41**	NS	NS
School supports positive physical environment	.39**	.45**	NS	.28*
Teachers support community involvement in decision making	.38**	.41**	NS	NS
Intra-team cooperation	.40**	.32**	NS	NS
Team commitment	.44**	.35**	NS	NS
Effective Use of Common Planning Time	NS	NS	NS	NS
Instructional management	NS	NS	NS	NS
Teachers support middle school concept	.36**	.42**	NS	.33**
Teachers support OCGA middle grades purposes	.24*	.24*	NS	NS
Teachers believe in unique needs of middle grades students	NS	NS	NS	NS

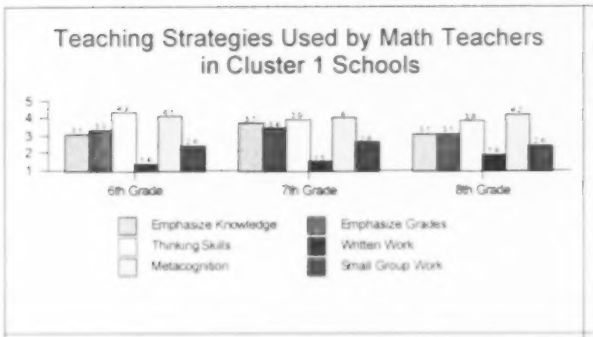
BEST COPY AVAILABLE

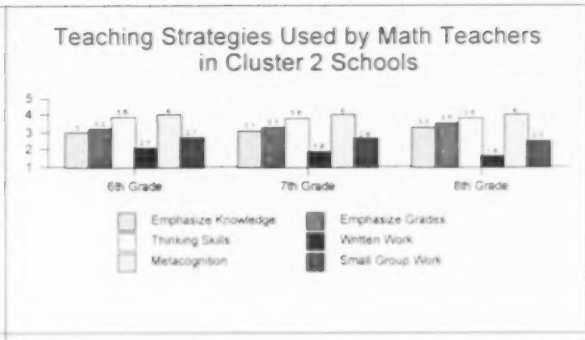
Teachers support exploratory classes	NS	NS	NS	NS
School culture emphasizes accomplishment	.24*	.26*	NS	NS
Scale: Teamwork	NS	NS	NS	NS
Team involvement in school governance	NS	NS	NS	NS
School culture emphasizes cooperation	.25*	.25*	NS	NS
Teachers assign written work	NS	NS	NS	NS
Teachers use other people as resources	-.24*	NS	NS	NS
Teachers assign small group work	NS	NS	NS	NS
Scale: Growth	NS	NS	NS	NS
Teachers encourage intrinsic competition	NS	NS	NS	NS
Teachers encourage extrinsic competition	NS	NS	NS	NS
Teachers emphasize a competitive climate	NS	NS	NS	NS
Scale: Positive work environment	NS	NS	NS	NS
Teachers follow uniform student policies	NS	NS	NS	NS
School culture emphasizes power	NS	NS	NS	NS
Scale: Assessment practices	NS	NS	NS	-.26*
Scale: Higher order thinking	NS	NS	NS	NS
Higher order thinking skills	NS	NS	NS	NS

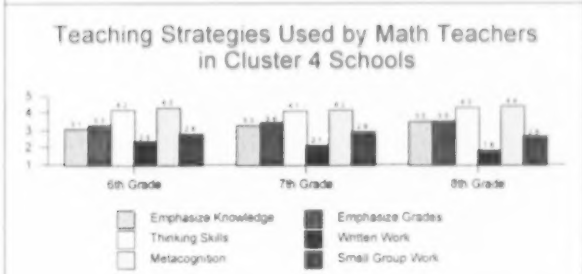
Metacognitive skills	NS	NS	NS	NS
Scale: Knowledge	NS	NS	NS	NS

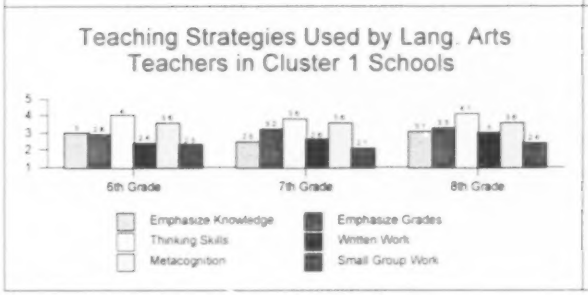
BEST COPY AVAILABLE

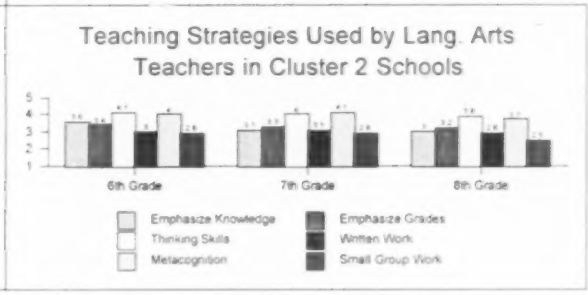
Appendix C -
Instructional Practices by Cluster, Subject and Grade



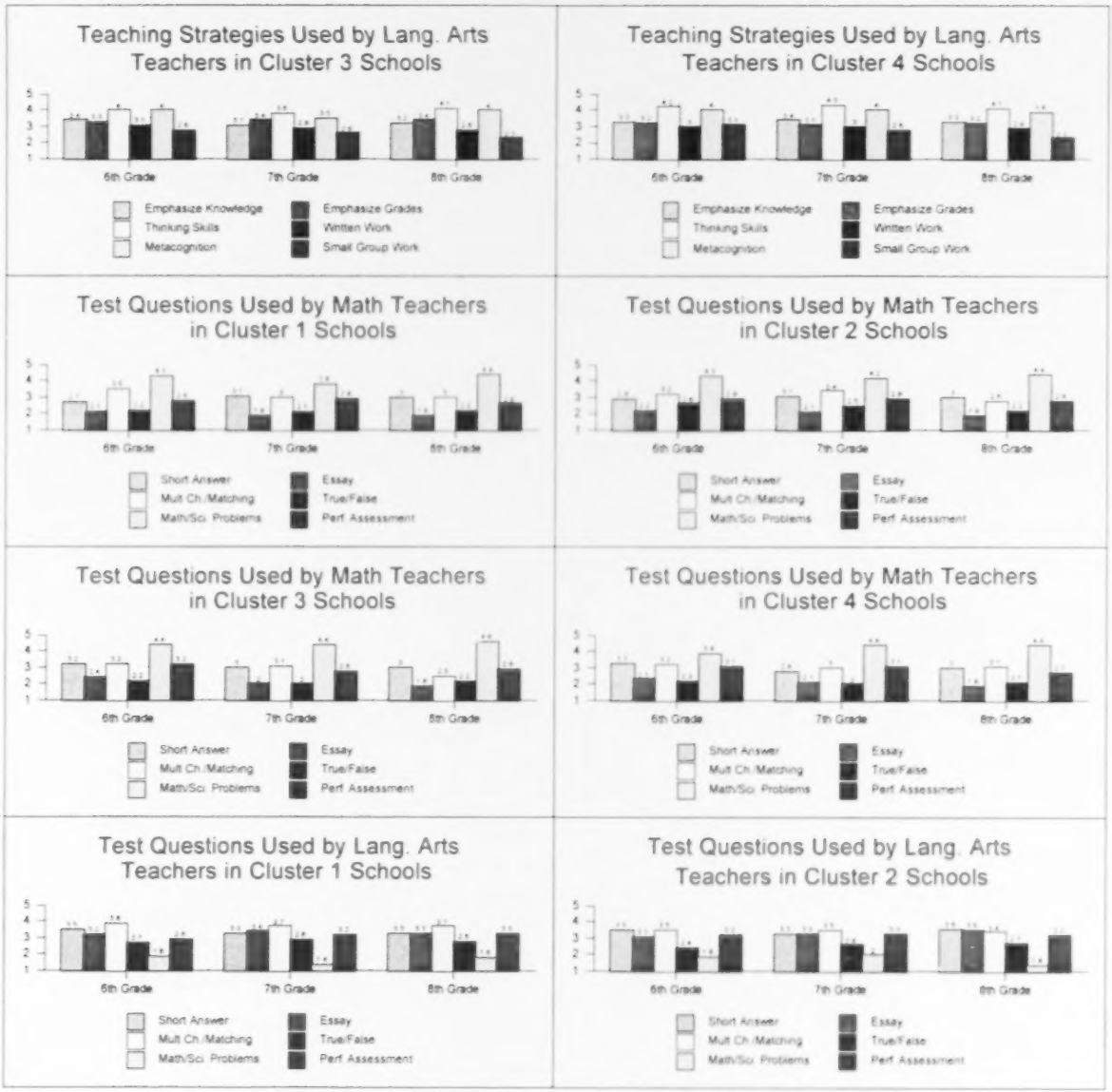




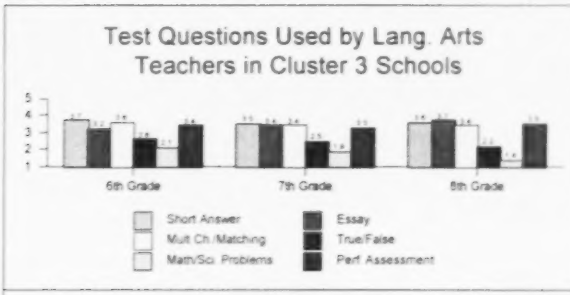


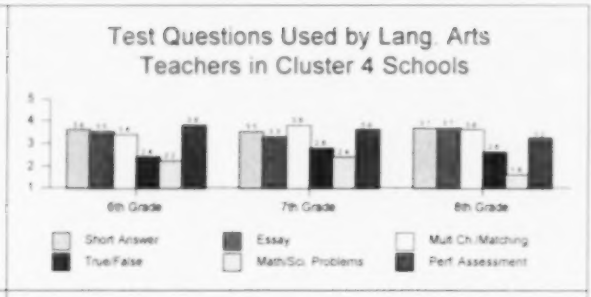


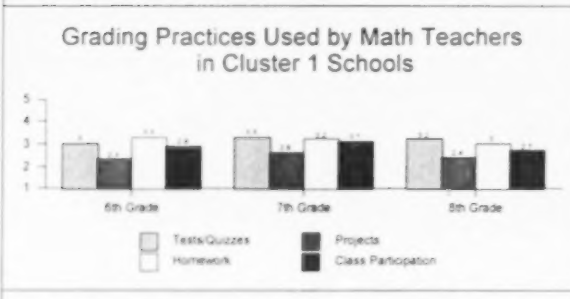
BEST COPY AVAILABLE

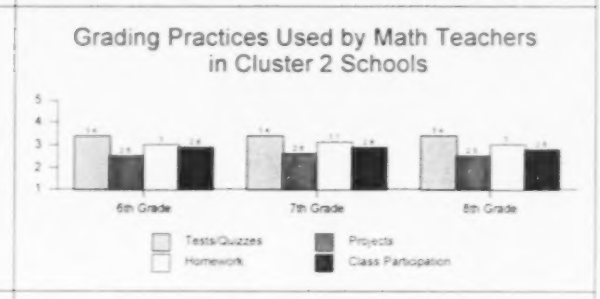


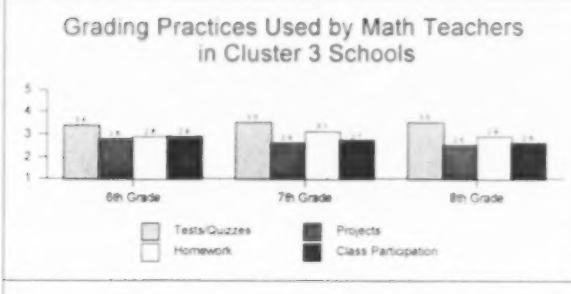
BEST COPY AVAILABLE

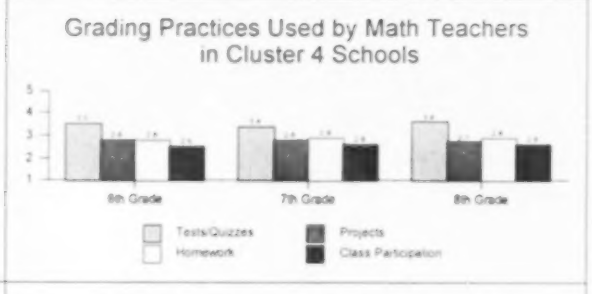

Test Questions Used by Lang. Arts Teachers in Cluster 3 Schools
6th Grade
7th Grade
8th Grade
Short Answer
Mult Ch /Matching
Math/Sci. Problems
Essay
True/False
Perf Assessment

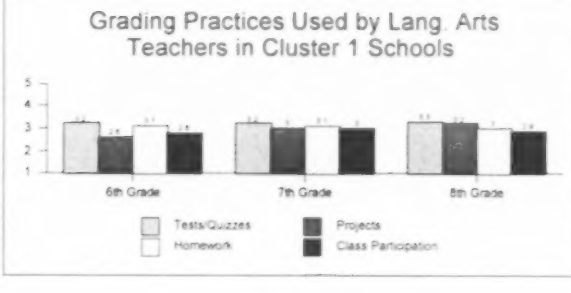

Test Questions Used by Lang. Arts Teachers in Cluster 4 Schools
6th Grade
7th Grade
8th Grade
Short Answer
True/False
Essay
Math/Sci. Problems
Mult Ch /Matching
Perf Assessment

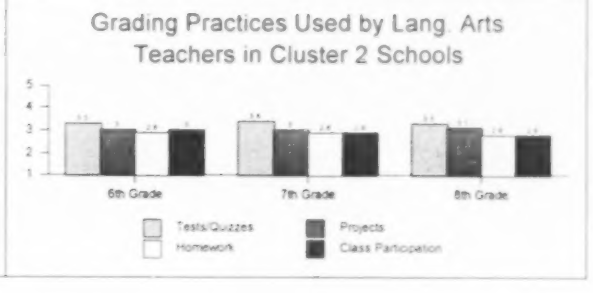

Grading Practices Used by Math Teachers in Cluster 1 Schools
6th Grade
7th Grade
8th Grade
Tests/Quizzes
Homework
Projects
Class Participation

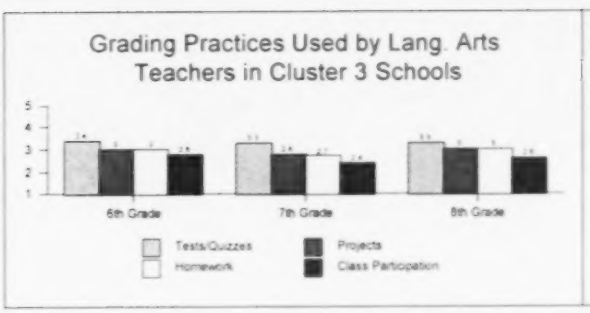

Grading Practices Used by Math Teachers in Cluster 2 Schools
6th Grade
7th Grade
8th Grade
Tests/Quizzes
Homework
Projects
Class Participation

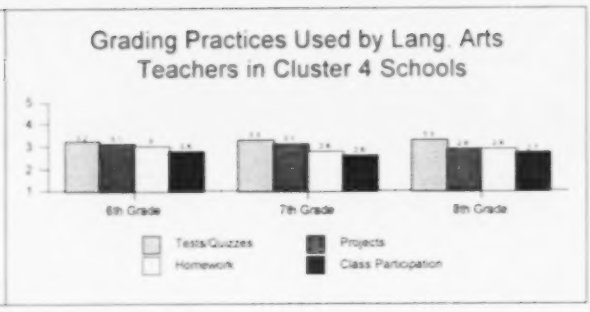

Grading Practices Used by Math Teachers in Cluster 3 Schools
6th Grade
7th Grade
8th Grade
Tests/Quizzes
Homework
Projects
Class Participation


Grading Practices Used by Math Teachers in Cluster 4 Schools
6th Grade
7th Grade
8th Grade
Tests/Quizzes
Homework
Projects
Class Participation

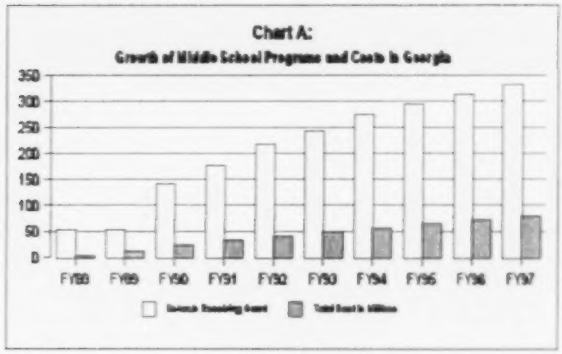

Grading Practices Used by Lang. Arts Teachers in Cluster 1 Schools
6th Grade
7th Grade
8th Grade
Tests/Quizzes
Homework
Projects
Class Participation

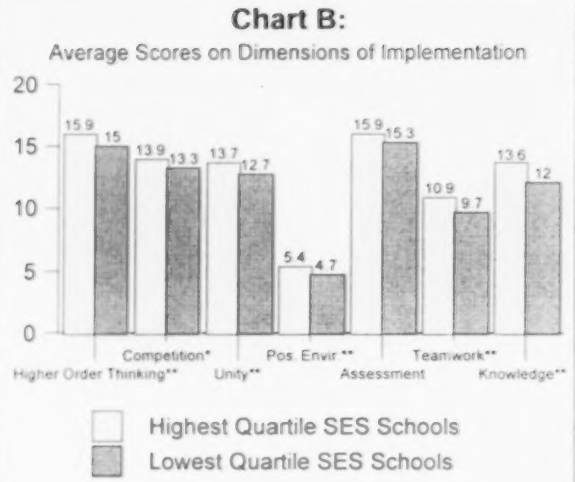

Grading Practices Used by Lang. Arts Teachers in Cluster 2 Schools
6th Grade
7th Grade
8th Grade
Tests/Quizzes
Homework
Projects
Class Participation

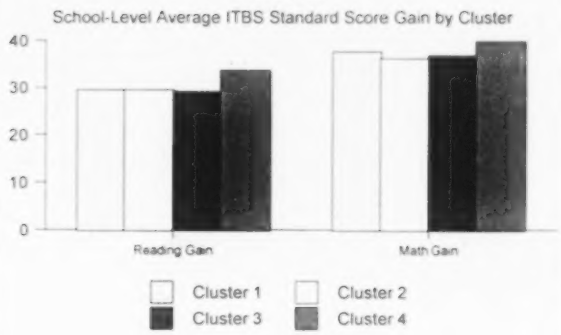

Grading Practices Used by Lang. Arts Teachers in Cluster 3 Schools
5
4
3
2
1
6th Grade
7th Grade
8th Grade
Tests/Quizzes
Homework
Projects
Class Participation

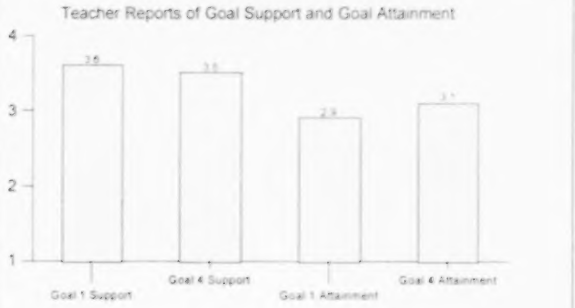

Grading Practices Used by Lang. Arts Teachers in Cluster 4 Schools
5
4
3
2
1
6th Grade
7th Grade
8th Grade
Tests/Quizzes
Homework
Projects
Class Participation

Charts A through P









BEST COPY AVAILABLE

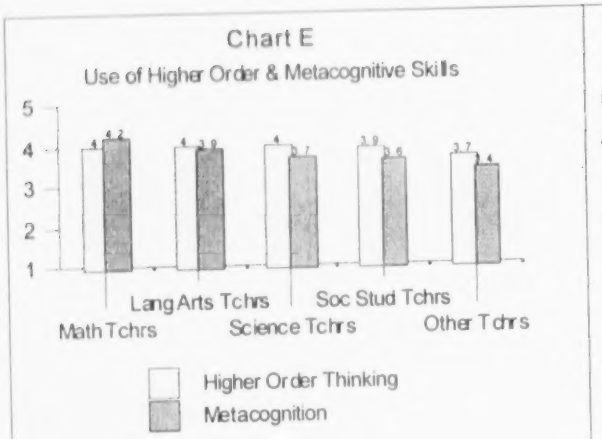


Chart E
Use of Higher Order & Metacognitive Skills
5
4
3
2
1
Math Tchrs
Lang Arts Tchrs
Science Tchrs
Soc Stud Tchrs
Other Tchrs
Higher Order Thinking
Metacognition

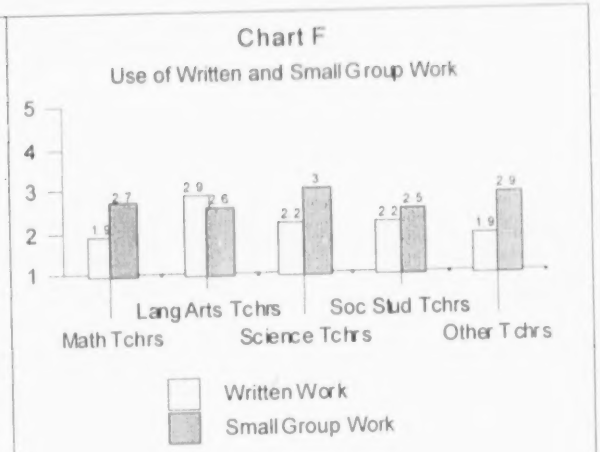


Chart F
Use of Written and Small Group Work
5
4
3
2
1
Math Tchrs
Lang Arts Tchrs
Science Tchrs
Soc Stud Tchrs
Other Tchrs
Written Work
Small Group Work

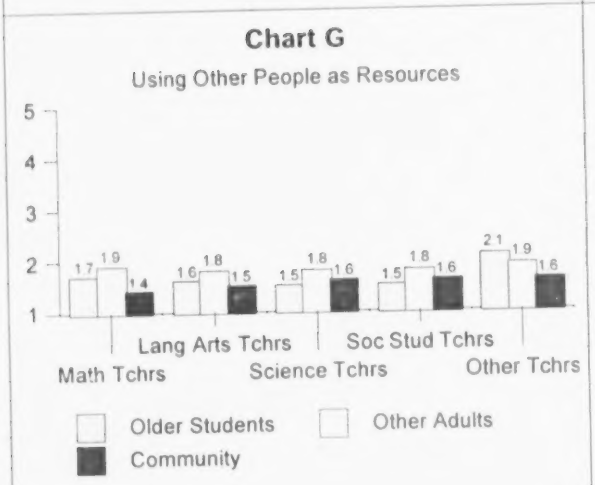


Chart G
Using Other People as Resources
5
4
3
2
1
Math Tchrs
Lang Arts Tchrs
Science Tchrs
Soc Stud Tchrs
Other Tchrs
Older Students
Other Adults
Community

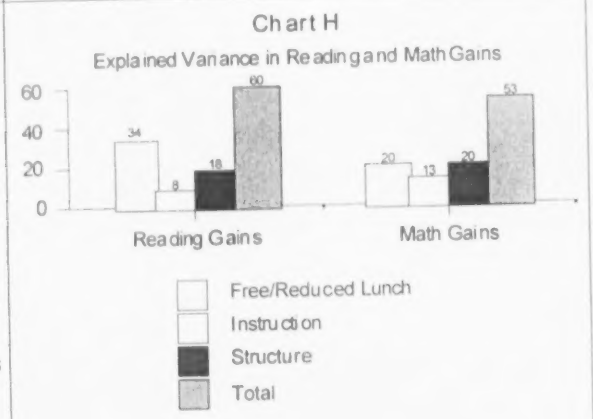


Chart H
Explained Variance in Reading and Math Gains
60
40
20
0
Reading Gains
Math Gains
Free/Reduced Lunch
Instruction
Structure
Total

Chart I

Changes in Lang. Arts Teaching Strategies, 6th - 8th Grade

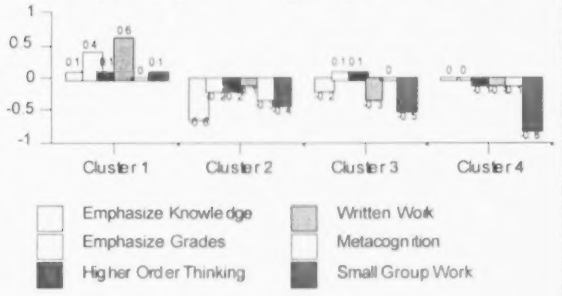


Chart J

Changes in Math Teaching Strategies, 6th - 8th Grade

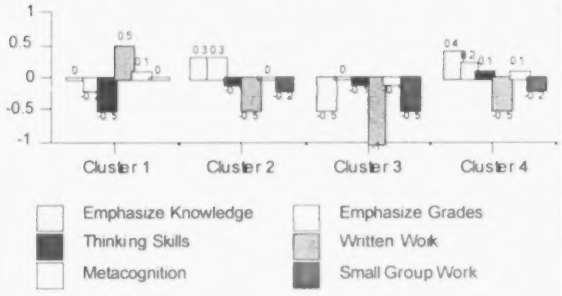


Chart K

Changes in Lang. Arts Testing Strategies, 6th - 8th Grade

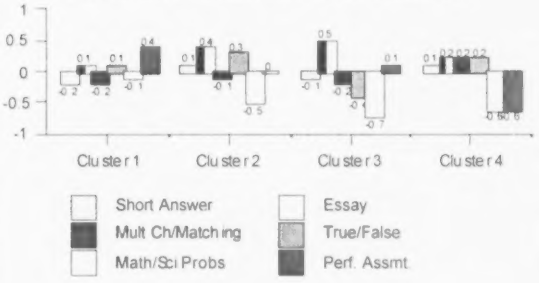


Chart L

Changes in Math Testing Strategies, 6th - 8th Grade

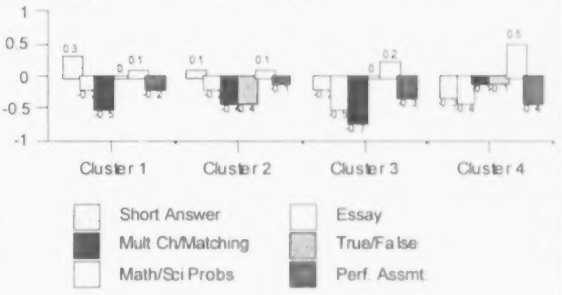


Chart M

Changes in Lang. Arts Grading Strategies, 6th - 8th Grade

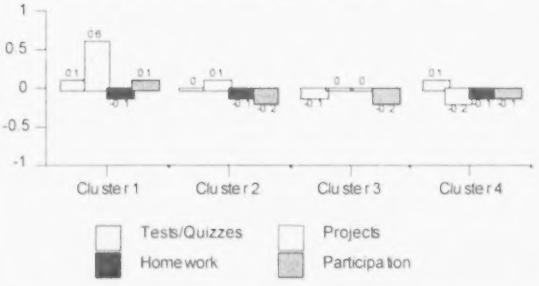


Chart N

Changes in Math Teachers' Grading Strategies, 6th - 8th Grade

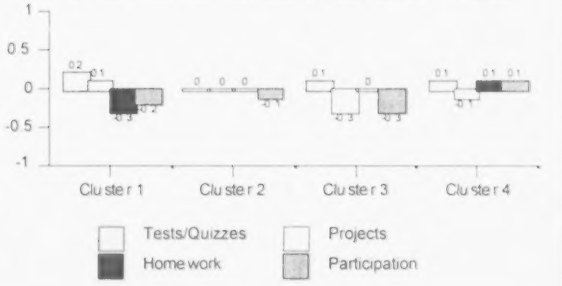


Chart O

HS Teacher Perceptions of Student Preparation

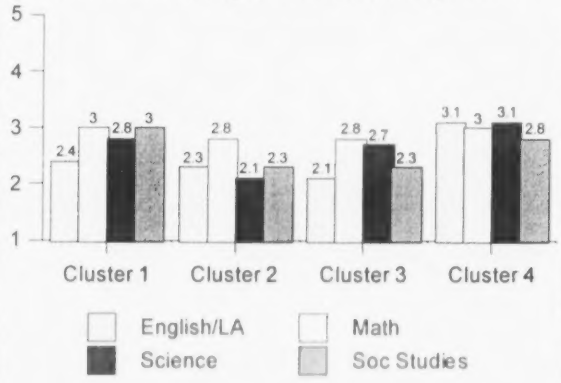


Chart P

HS Teacher Perceptions of Student Preparation

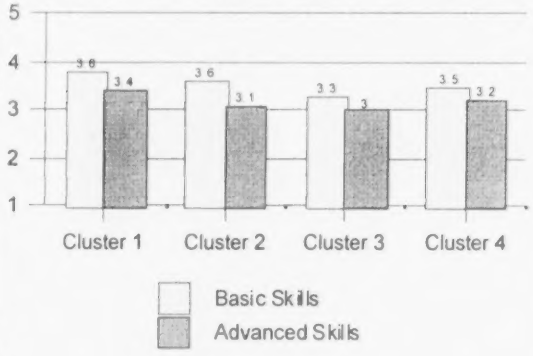


Chart Q

HS Teacher Perceptions of Improved Behavior

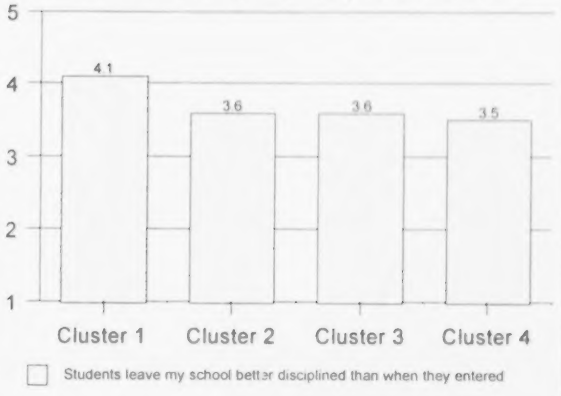


Table 1: Significant Correlations Between School Characteristics and Gain Scores

	Reading	Math
School Supports Middle Grades Purposes	r=.49**	r=.41**
School Provides a Positive Physical Environment	r=.39**	r=.45*

** Significant at the .01 level
* Significant at the .05 level

Table 2: Number of Schools per Implementation Cluster

Cluster	No. of Schools
1 (low)	13 (16%)
2 (moderately low)	30 (38%)
3 (moderately high)	18 (23%)
4 (high)	18 (23%)

Table 3: Implementation by Number of Students Receiving Free/Reduced Price Lunch

Cluster	Average Pct. F/R	Minimum Pct. F/R	Maximum Pct. F/R
1	57	34	100
2	51	2	100
3	40	4	90
4	38	1	84

Table 4: Relationship Between Gain Scores and Free/Reduced Lunch Levels

	Reading	Math
Pct. F/R Lunch	r = -.53**	r = -.40**

** Significant at the .01 Level

Table 5: Calculation of Gain Scores from Standard Scores

	Reading: 8th Gd SS - 5th Gd SS = Reading Gain Score	Math: 8th Gd SS - 5th Gd SS = Math Gain Score
Cluster 1	240.6 - 211.1 = 29.5	248.4 - 211.0 = 37.4
Cluster 2	243.5 - 213.9 = 29.6	251.3 - 215.2 = 36.1
Cluster 3	247.4 - 218.2 = 29.2	254.3 - 217.5 = 36.8
Cluster 4	249.9 - 216.2 = 33.7	255.8 - 216.0 = 39.8

Table 6: The Relationship Between Gain Scores and Teacher Self-Reported Beliefs about Middle Grades Education

	Reading	Math
Teachers support middle school concept	.36**	.42**
Teachers support middle grades purposes	.24*	.24*

** Significant at the .01 Level * Significant at the .05 Level

Table 7: Significant Correlations Between Team Interactions and Gain Scores

	Reading	Math
Intra-Team Cooperation	.40**	.32**
Interdisciplinary Instruction	NS	.25*
Team Members' Commitment to their Team	.44*	.35*

** Significant at the .01 Level * Significant at the .05 Level
NS = Not Significant

Table 8: Significant Correlations Between Interdisciplinary Teaming and Gain Scores

	Effective Use of Planning Time	Reading	Math
Intra-Team Cooperation	.59**	.40**	.32**
Team Members' Commitment to their Team	.57**	.44*	.35*

** Significant at the .01 Level * Significant at the .05 level

Table 9: Practices Associated with Higher ITBS Gain Scores

	Reading	Math
In Low SES Schools (where more than 2/3 of children receive free or reduced price lunch)...	...help students make connections between subject areas ...teach students to evaluate information ...help students develop research skills in the classroom ...take students to the library/media center ...give more tests and quizzes	...spend less time emphasizing the major ideas of lessons ...spend less time relating new content to previously learned material ...spend less time teaching students how to organize materials ...give more tests and quizzes
In Moderate SES Schools (where between 1/3 and 2/3 of children receive free or reduced price lunch)...	...assign fewer oral book reports ...use more short-answer test questions	...spend less time teaching students to organize their thoughts and their materials ...use more short-answer test questions ...use fewer performance assessment test items
In High SES Schools (where 1/3 or fewer children receive free or reduced price lunch)...		...ask students to work together in small groups ...use fewer multiple choice/matching test questions

Table 10: Significant Correlations Between Governance Practices and Gain Scores

	Reading	Math
School supports community involvement in decision making	.38**	.41**
Teachers support community involvement in instruction	NS	NS

** Correlations are significant at the .01 level
NS = Correlations are not significant

Table 11: Average Responses for Teacher Perceptions of Governance, by Free/Reduced Lunch Levels

Teachers were asked whether they agree that certain statements represent conditions in their school.
1=Strongly Disagree; 2=Disagree; 3=Agree; 4=Strongly Agree

Perception Dimension	Lowest SES Quartile - Group 1	Second SES Quartile - Group 2	Third SES Quartlie - Group 3	Highest SES Quartile - Group 4	Significant Differences
School supports community involvement in decision making	2.7	2.3	2.3	2.1	1 higher than 2** 1 higher than 3** 1 higher than 4**
Teachers support community involvement in instruction	3.1	2.8	2.9	2.9	1 higher than 2*
Teachers follow uniform student policies	2.2	2.3	2.1	2.3	None

** Significant at the .01 level *Significant at the .05 level
Significance levels determined by Analysis of Variance

Table 12: Significant Correlations Between School Climate Factors and Gain Scores

	Reading	Math
Student-Teacher Relationships[a]	r = .47**	r = .47**
Instructional Efficacy[a]	r = .49**	r = .44**
Accomplishment-Oriented School Culture[b]	r = .24*	r = .26*

** Significant at the .01 Level * Significant at the .05 Level
[a]Student Reports [b]Teacher Reports

Table 13: Inter-Correlation of School Climate Factors

	Relationships	Efficacy	Culture
Student-Teacher Relationships[a]	r = 1.00		
Instructional Efficacy[a]	r = .66** (r = .58**)	r = 1.00	
Accomplishment-Oriented School Culture[b]	r = .51** (r = .42**)	r = .47** (r = .32**)	r = 1.00

** p <= .01
[a]Student Reports [b]Teacher Reports
values in parentheses are controlled for SES